MTG 95.5.9 009

OVERVIEW OF TRANSCLUSIVE SYSTEMS.

MTG 95.5.9 00

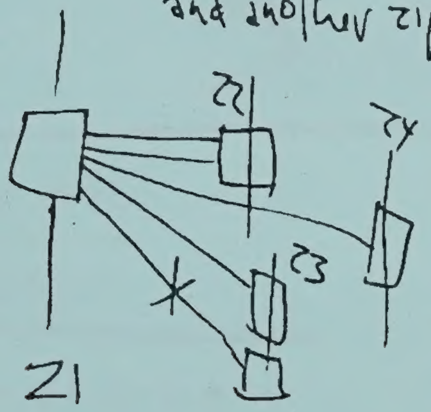
RANGE OF TRANSCLUSIVE SYSTEMS

ZIPS

Big chunks = ITEMS

1965 = Linked or transcluded
version

(Only one such relation
between one chunk
and another zip)



CLEAN & SIMPLE,
DESERVES
STUDY

DIFFICULT:
"Where the
Autodesk
money
went"

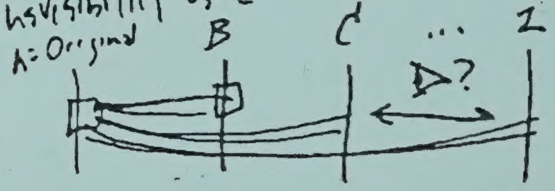
FINE-GRAIN SERVERS

(Xu 88.1, XOC server
(eg. addr. space) ARBITRARY SPACES)

(LIKE Z.LIST
where any byte can be chunk)

MANY LINKS POSSIBLE
ON SAME BYTES

Transvisibility issue

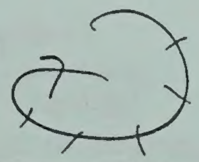


JBx'+3

✓

MR— MAY 2 7 1995 00

TN,
David Hamilton of
Wall Street Journal.

0 (Previous meeting's overview of Transclusion, Transpublishing, Transmedia, Transcopyright;
1960 idea as a  Complete Circle.

1 XANADU MODEL : Generalized front & back; Addressable Elements, Connections
2 Clean Compositing
3 Clean Ownership Borders.

NO SECOND-CLASS LINKS!

4 ZIPS for HISTORY
MULTITHREADING

5 TRANSCLUSIVE E-MAIL
6 TRANSCLUSIVE MOVIES
[TRANSVISIBILITY.

[this had been already on the whiteboard, except for new annotations to '1960 ideas']

MTG MAY 2 7 1995

TRANSCLUSION
'virtually include across a boundary'

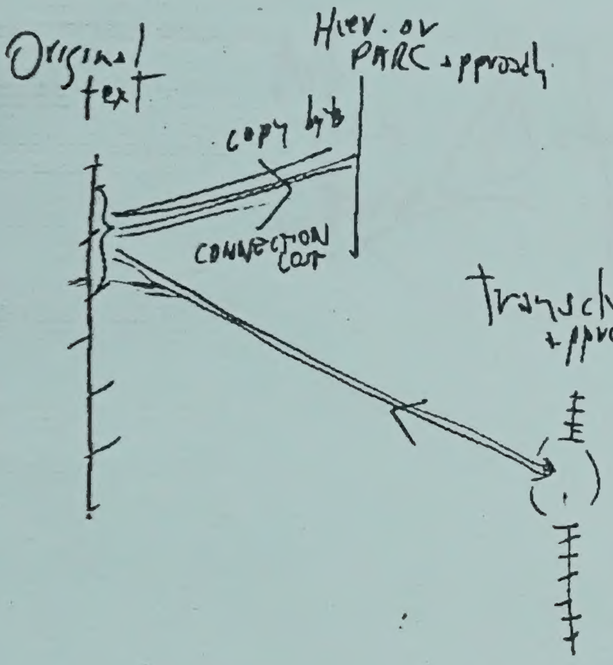
TRANSPUBLISHING

TRANSMEDIA

TRANSCOPYRIGHT
SYSTEM OF PERMISSION.

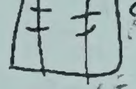
ANYONE MAY FREELY REPUBLISH VIRTUALLY.

RE-USE OF MATERIALS
BY POINTER
VIRTUAL INSTANCES

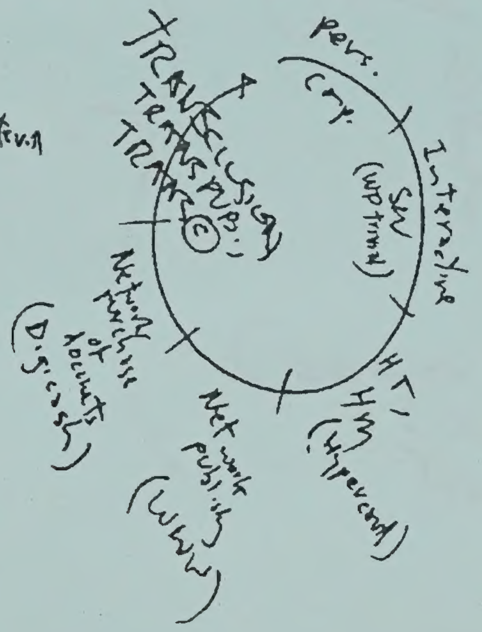

Original text
Hier. or PARC approach
copy bits
CONNECTION LOST

transclusive approach = REPRESENT IT IN NEW DOCUMENT WITH A POINTER

Purposes:
accuracy
update
INTERCOMPARISON


compare two contexts of same material

1960 idea


TRANSCLUSION
TRANSPUB.
TRANS©
Pers. Cpr.
SW (WP timed)
Interactive
HT / HM (Hypercard)
Network publish (WWW)
Network purchase of documents (Dialog)

Trans © 1995 M Kub.
ordinary copyright claim
permission

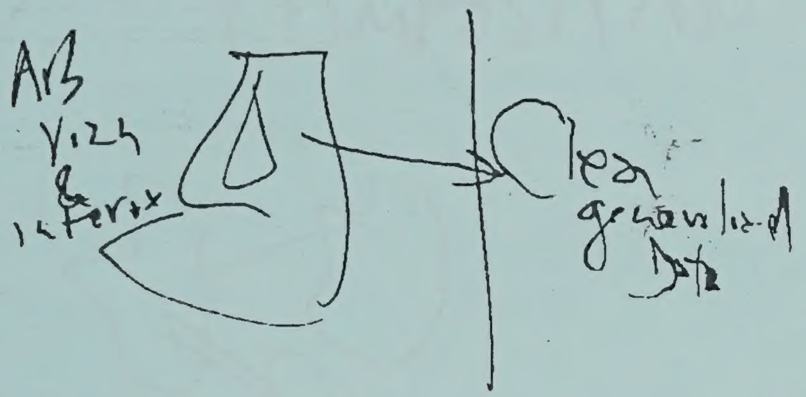
& TPL MEDIA
& TRANSVIZ.

MG MAY 2 7 1995 1

Xu model

Generalized

① front & back end

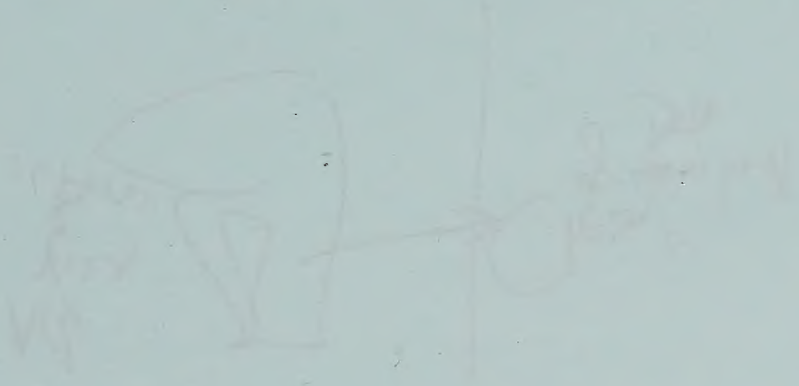

ArB
Vizh
&
interx
Clean
generalized
Data

Addressable
Elements
Bytes of text
Pixels
Frames
Audio samples
...

Connex
Links (betw. Things different)
Transclusion (" " same
- embedded instances)

[illegible]

[illegible]



[illegible]

① [illegible] & [illegible]

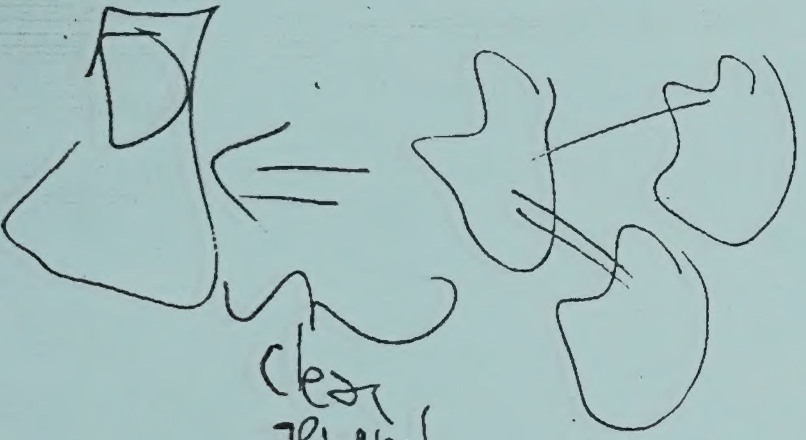
[illegible]

Vn [illegible]

MRG MAY 27 1995 2

Xu model

② CLEAN COMPOSITING



Clean
general
interface

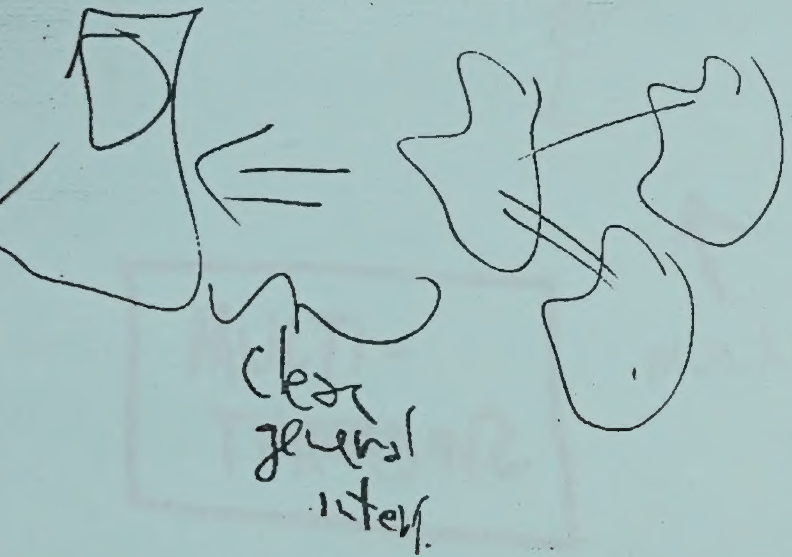
Addressable
Elements
Bytes of text
Pixels
Frames
Audio samples
...

Connex
Links (betw. Things different)
Transclusions (" " same
- embedded instances)

MTG MAY 27 1995

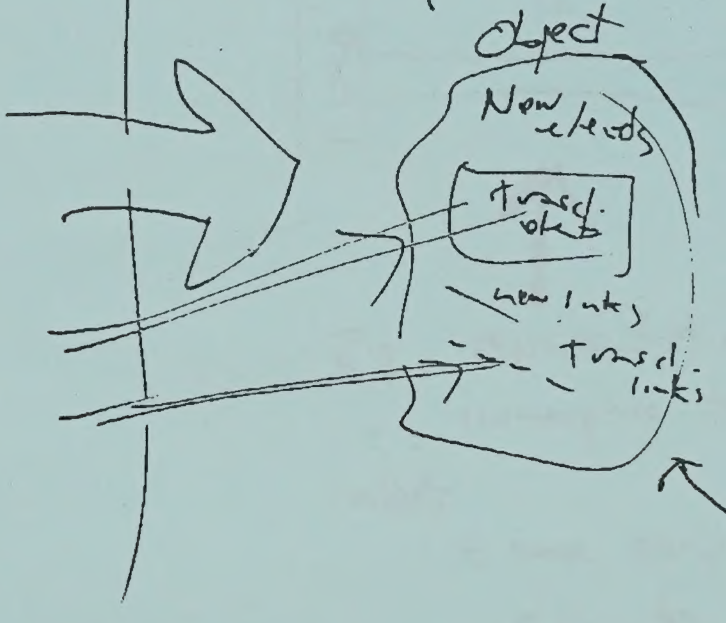
Xu model

② CLEAN COMPOSITING


Clear general interf.

CLEAN

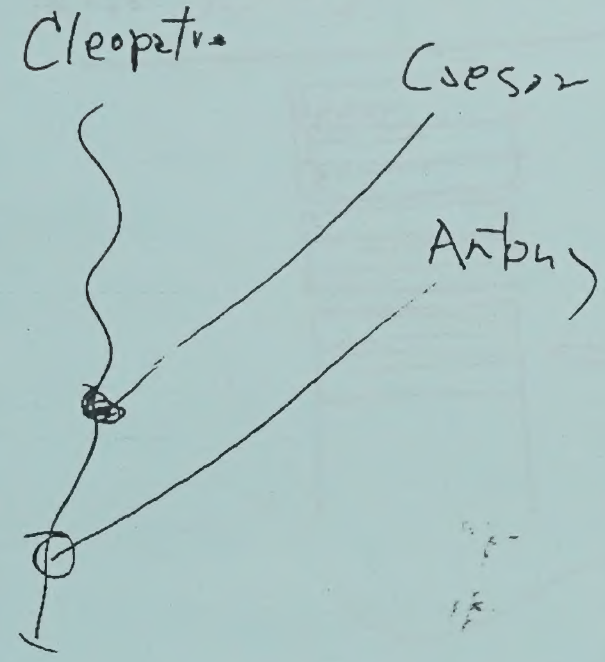
OWNERSHIP BORDERS of VIRTUAL OBJECTS

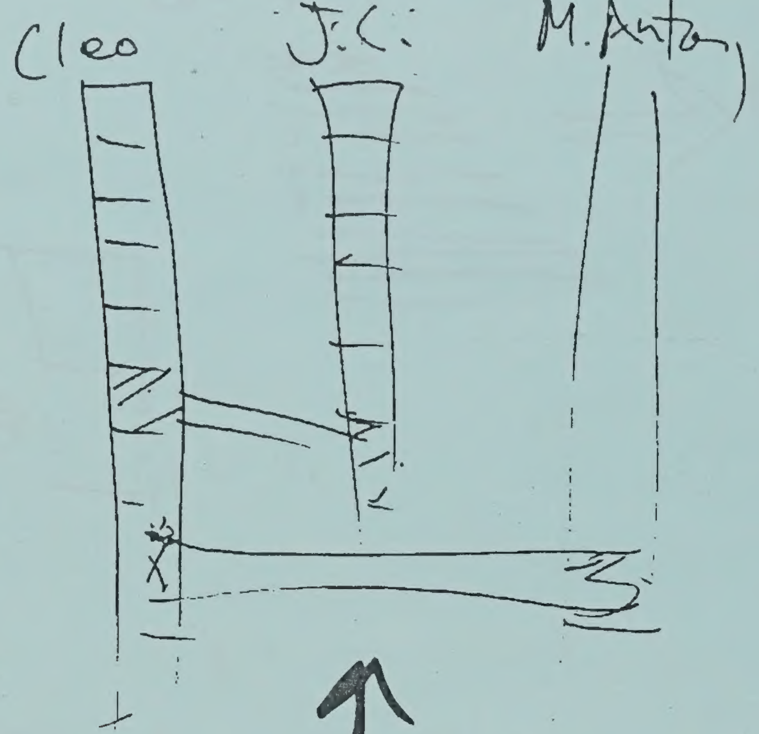

object
New elements
transcl. objects
new links
transcl. links
ownership is of bytes 'n' border

THERE ARE NO SECOND-CLASS LINKS.
(the reader's links are as good as the author's.)

ZIPS for HISTORY

MTG MAY 27 1995 4


Cleopatra
Caesar
Antony


Cleo
J.C.
M.Antony

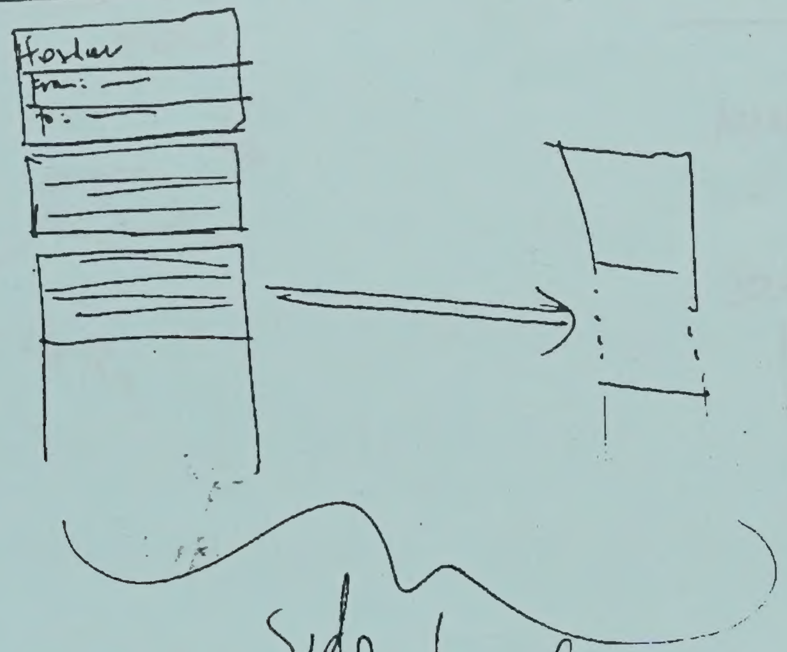
MULTI-THREADING

Multithreading
of items

Zip representation
isomorphic to 'multithreading';
contents
of same items
may be seen
side by side

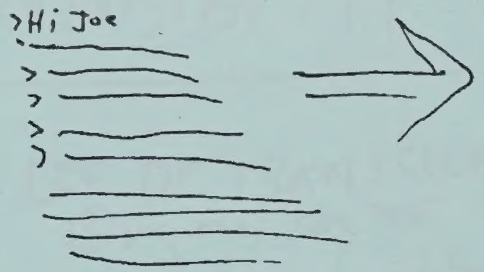
MTG MAY 2 7 1995 5

TRANSCLUSIVE E-MAIL


Header
From: —
To: —

side-by-side
for all contexts

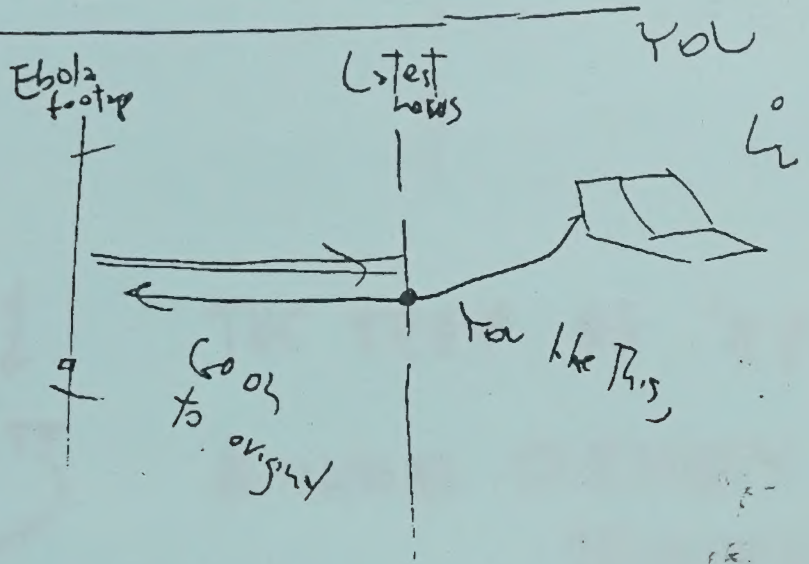
Conventional email:



How find original context?

MTG MAY 27 1995 6

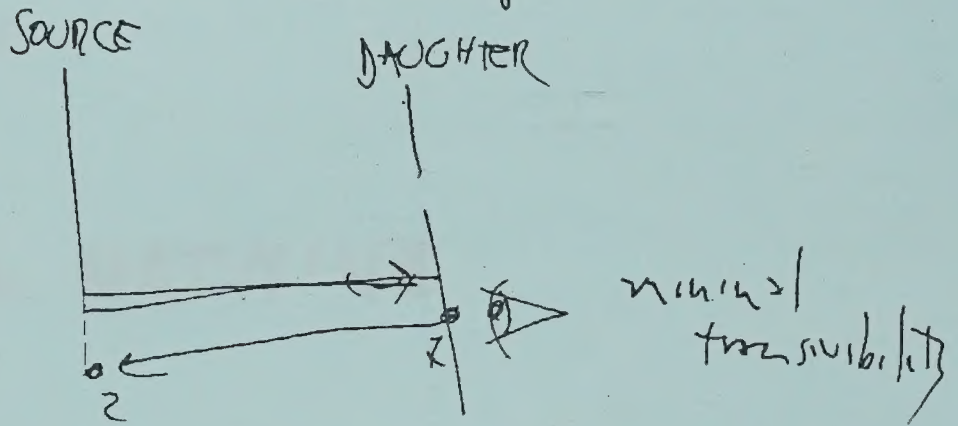
TRANSCLUSIVE MOVIES


YOU
Ebola footage
Latest news
You like this,
Go on to original

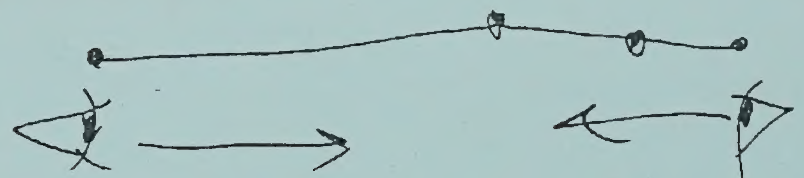
TRANSVISIBILITY

Tcl
Osterhout?
Berkeley
Interp.
Scr. Lg.
molded to Unix

MIN. DEF OF TRANSCLUSION -
Original context available
from daughter context


SOURCE
DAUGHTER
z
x
minimal transvisibility

STRONG
T'VIZ



JHL

MTG AUG 3 1 1995 0

from DVL: Mr. Aoike
Mr. Hagiwara
Mr. Nishimura

from HyperLab: TNelson
Marlene Mallicoat
Mr. Asai

1 THE TRAP OF 'APPLICATIONS'

3 MINIMAL STRATEGY FOR
TOMORROW'S MEDIA MACHINE

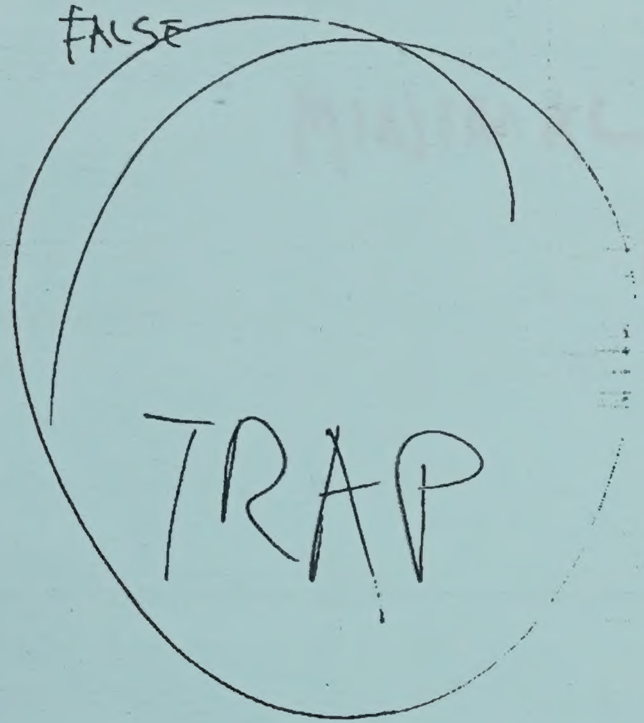
5 THE XANADU CLIENT STRATEGY.

AUG 3 1 1995

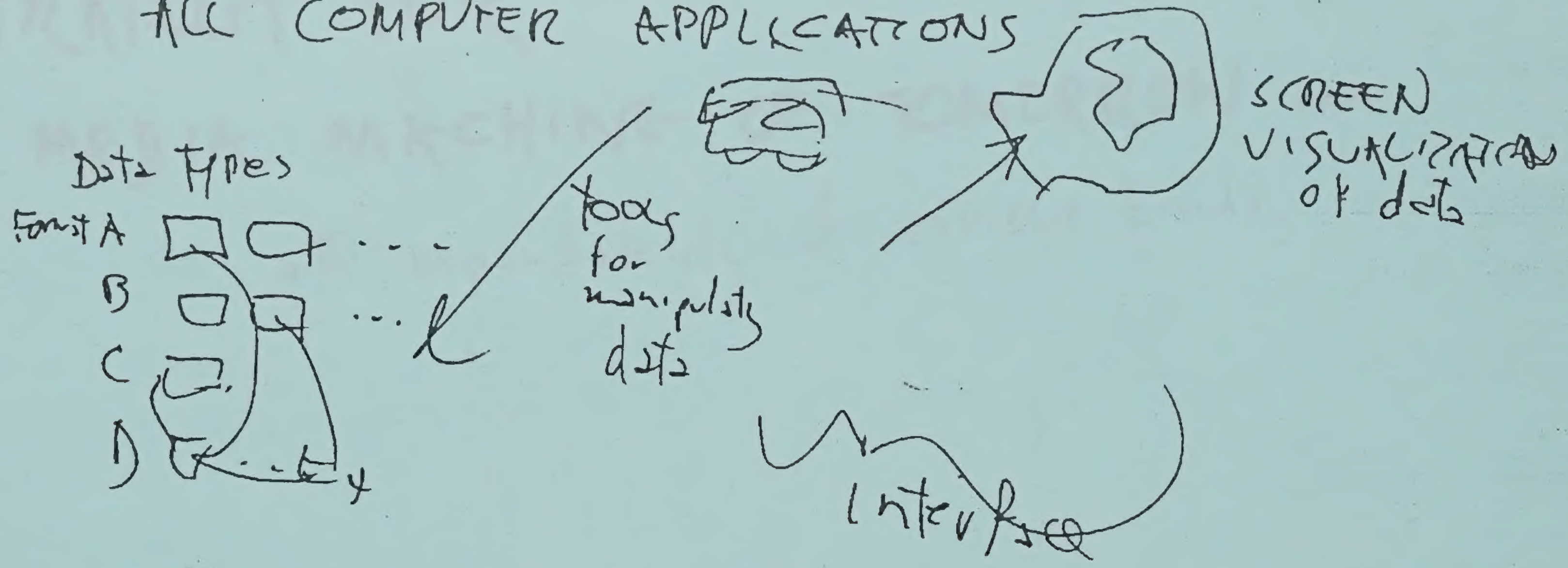
THE TRAP OF 'APPLICATIONS' —

Attempting to trap users in particular visualizations and interfaces.

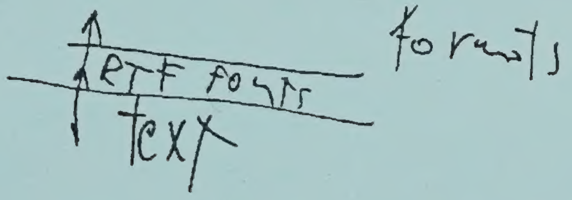
AUG 3 1 1995 2



ALL COMPUTER APPLICATIONS


Data Types
Format A
B
C
D
tools for manipulating data
SCREEN VISUALIZATION of data
interface

MICROSOFT WORD

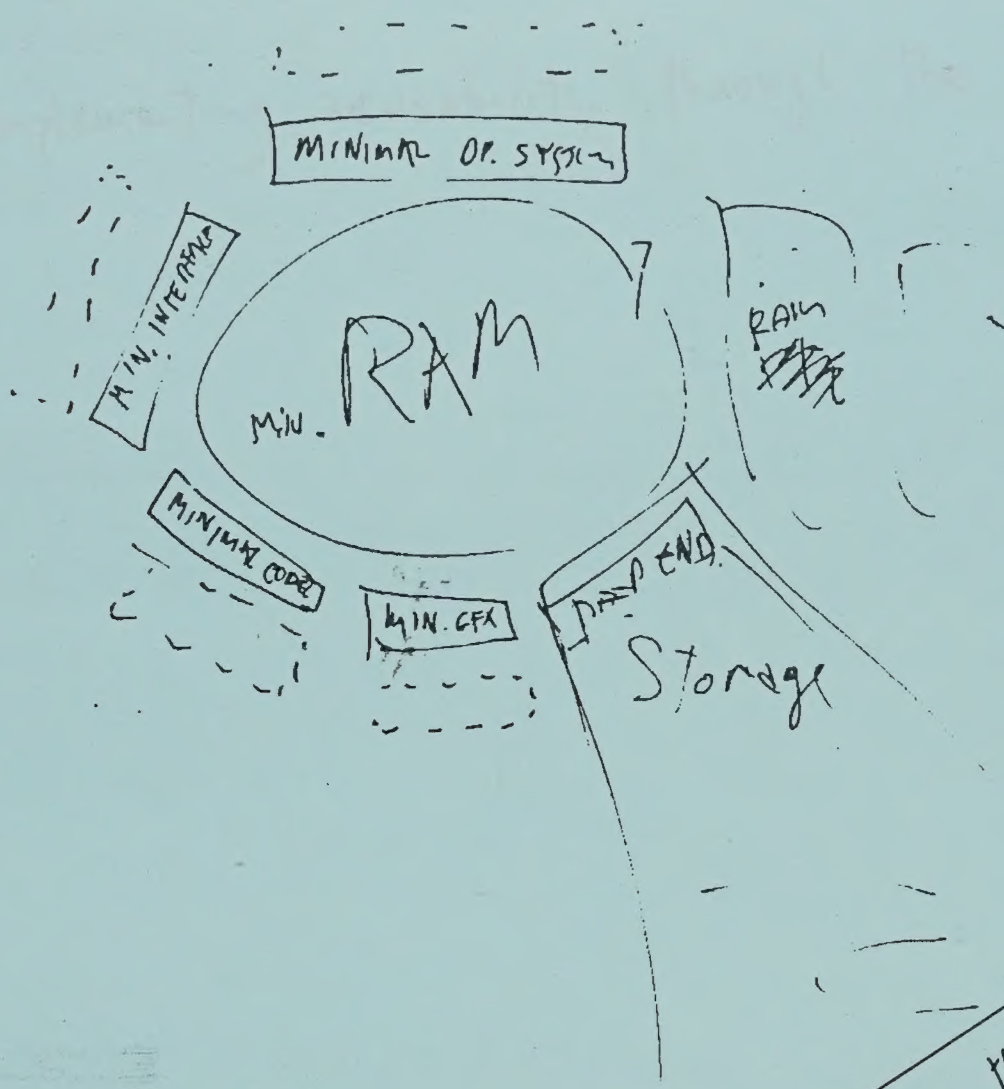

RTF fonts
text
formats

AUG 3 1 1995

MINIMAL STRATEGY FOR
A MEDIA MACHINE OF TOMORROW —

with expandability of various kinds.

AUG 3 1 1995


MINIMAL OP. SYSTEM
MIN. INTERFACE
MIN. RAM
MINIMAL CODE
MIN. GFX
~~DAP~~ END
Storage
RAIN

Have the contents test their environment,
make presentation
at whatever level
is possible!

AUG 3 1 1995

THE XANADU CLIENT STRATEGY.

Implementing reusability through the client side.

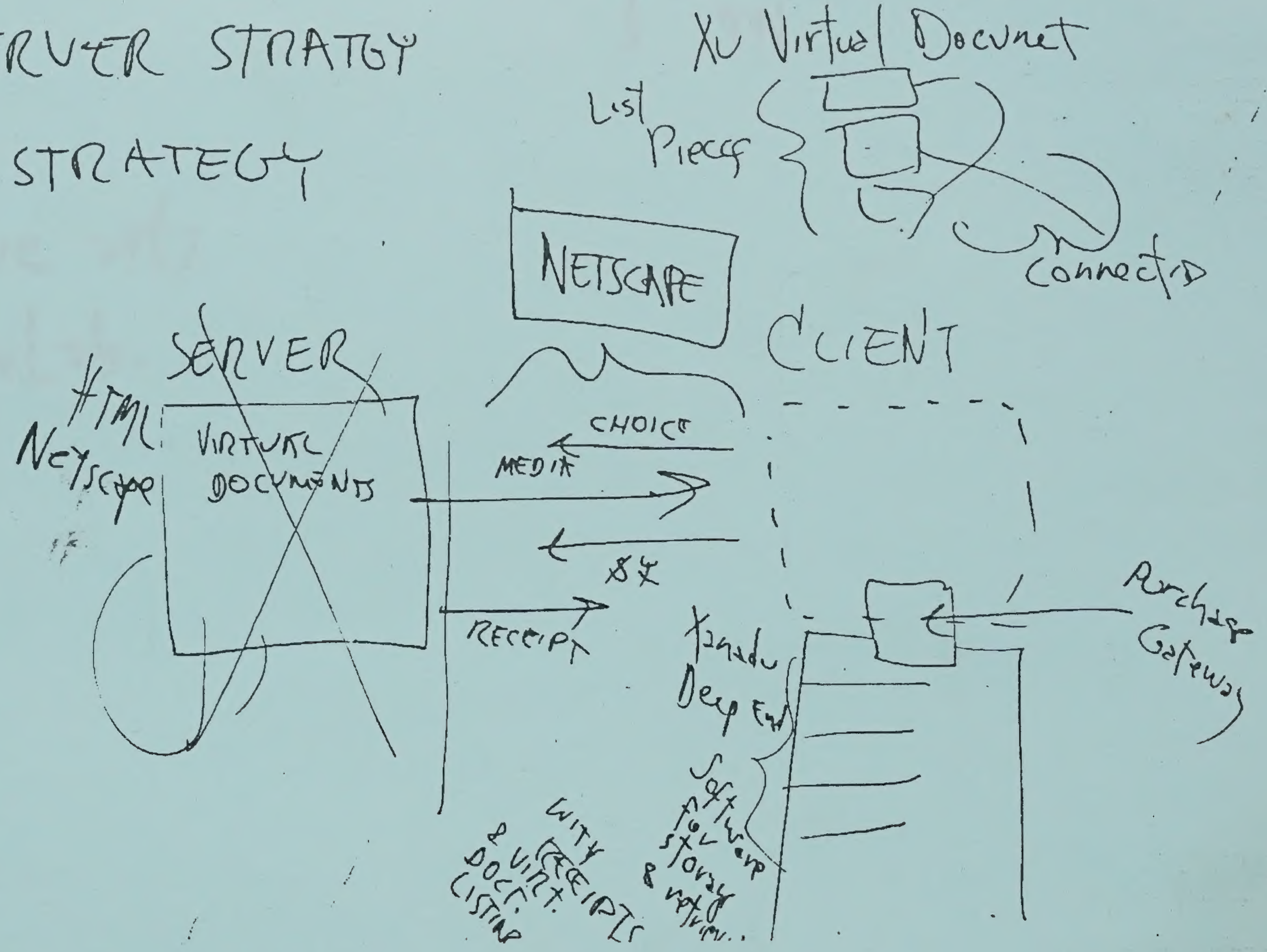
AUG 3 1 1995

6

1970-1992 XANADU SERVER STRATGY

NOW: XANADU CLIENT STRATEGY

RE-USABLE
MEDIA
with
ownership
& royalty
⇩
Trans© 1995 T. Nelson

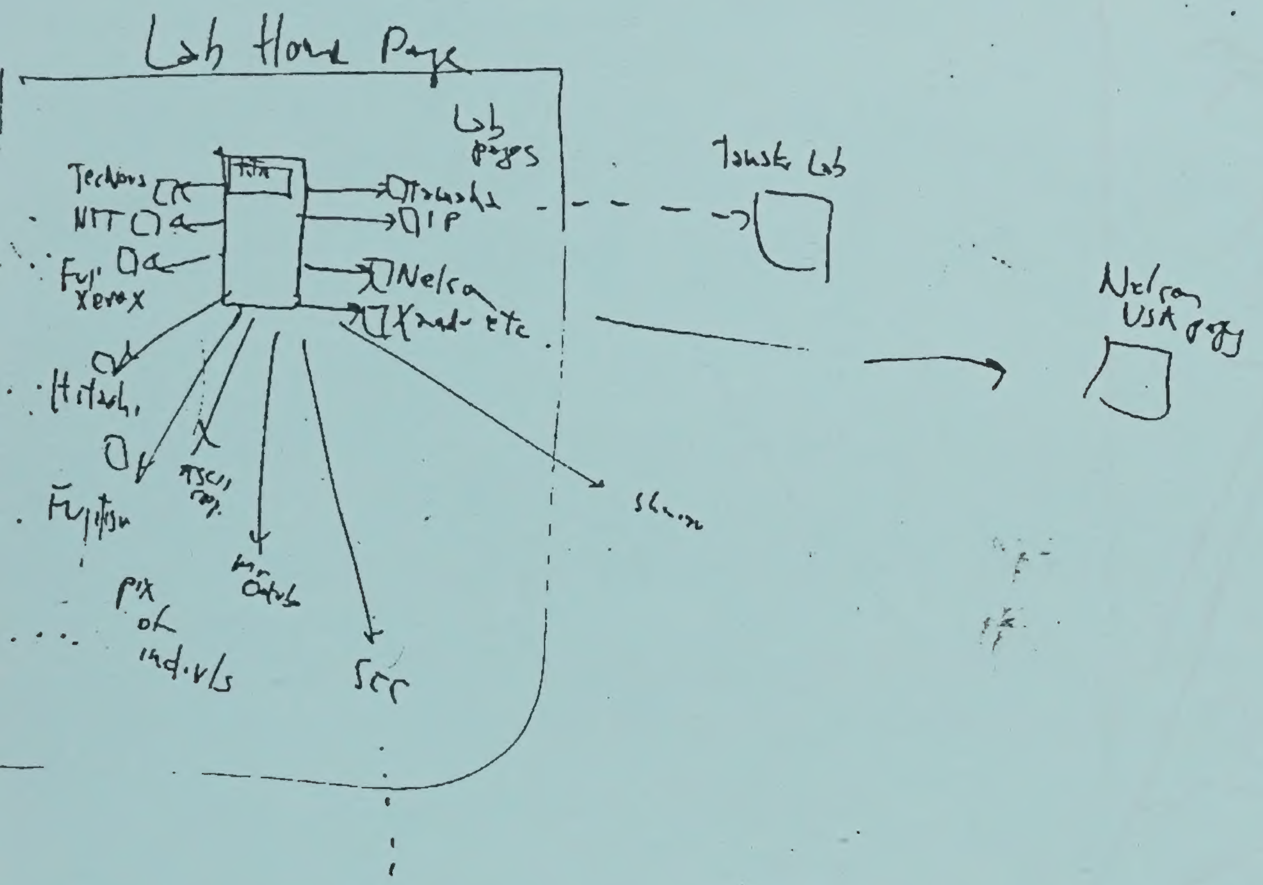

Xu Virtual Documet
List Pieces
Connectn
NETSCAPE
CLIENT
~~SERVER~~
HTML
Netscape
~~VIRTUAL DOCUMENTS~~
CHOICE
MEDIA
$$
RECEIPT
Xanadu Deep End
Software for storage & retriev..
WITH RECEIPTS & VIRT. DOC. LISTING
Purchase Gateway

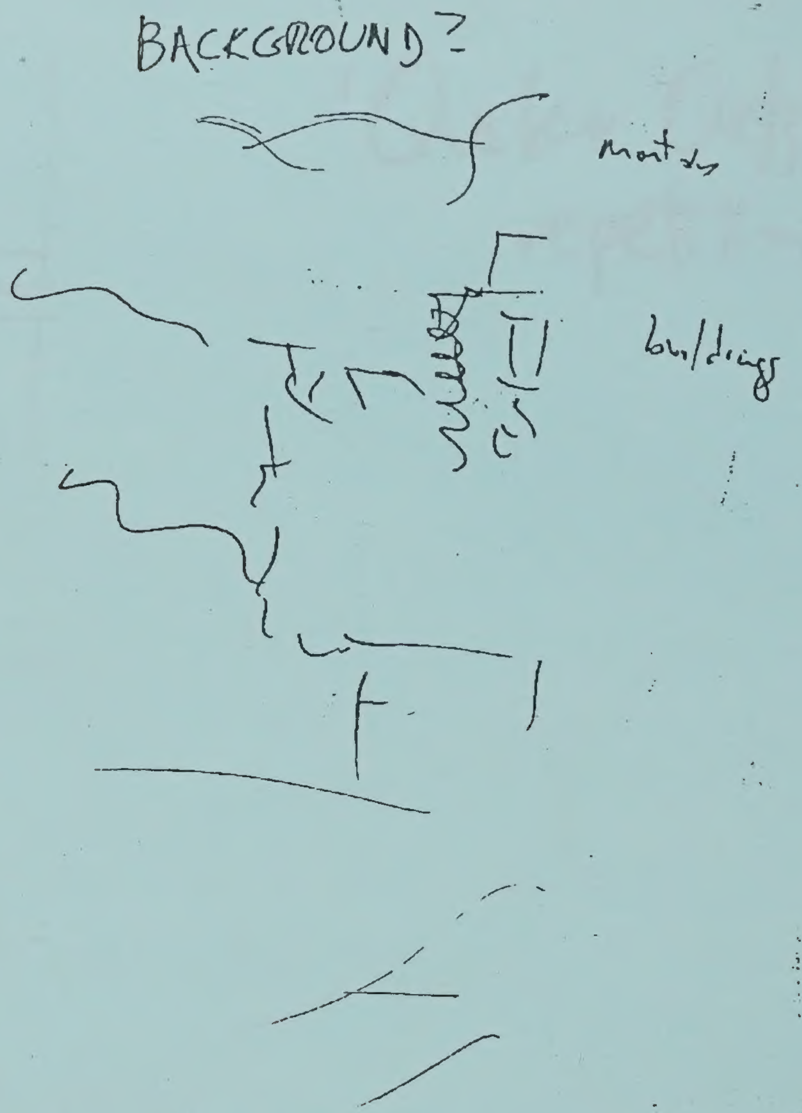
MTG SEP 1 1 1995 0

Mr. Shimizu,
TN.

Web Page graphic arts
for HyperLab.

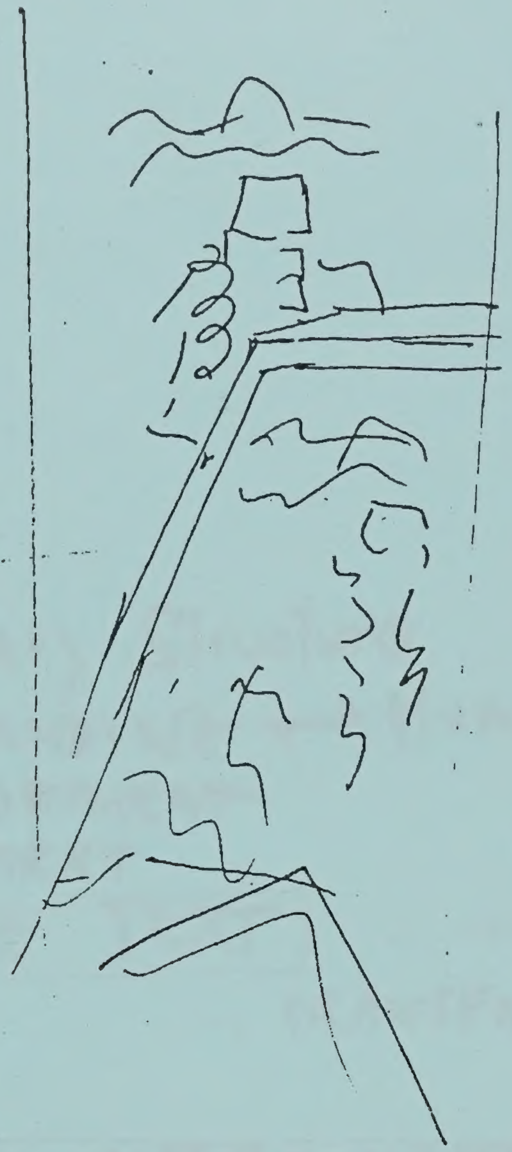
SEP 1 1 1995 1


Lab Home Page
Lab pages
title
Technos
NTT
Fuji Xerox
Hitachi
Fujitsu
TSCII rep.
Mr Ootsuka
pix of individuals
SCC
Tanaka
IP
Nelson
Xanadu etc
Shown
Tanaka Lab
Nelson USA pages


BACKGROUND?
mountains
buildings

[with Andrew Ross]

SEP 11 1995 2



'Quaker Oats' repetition.

0

MTG 95.7.28

Prof. Ohiwa
(Keio University),
TN,
MM.

1 time-line as TN sees it

2 TN MODEL: New Literary Structure

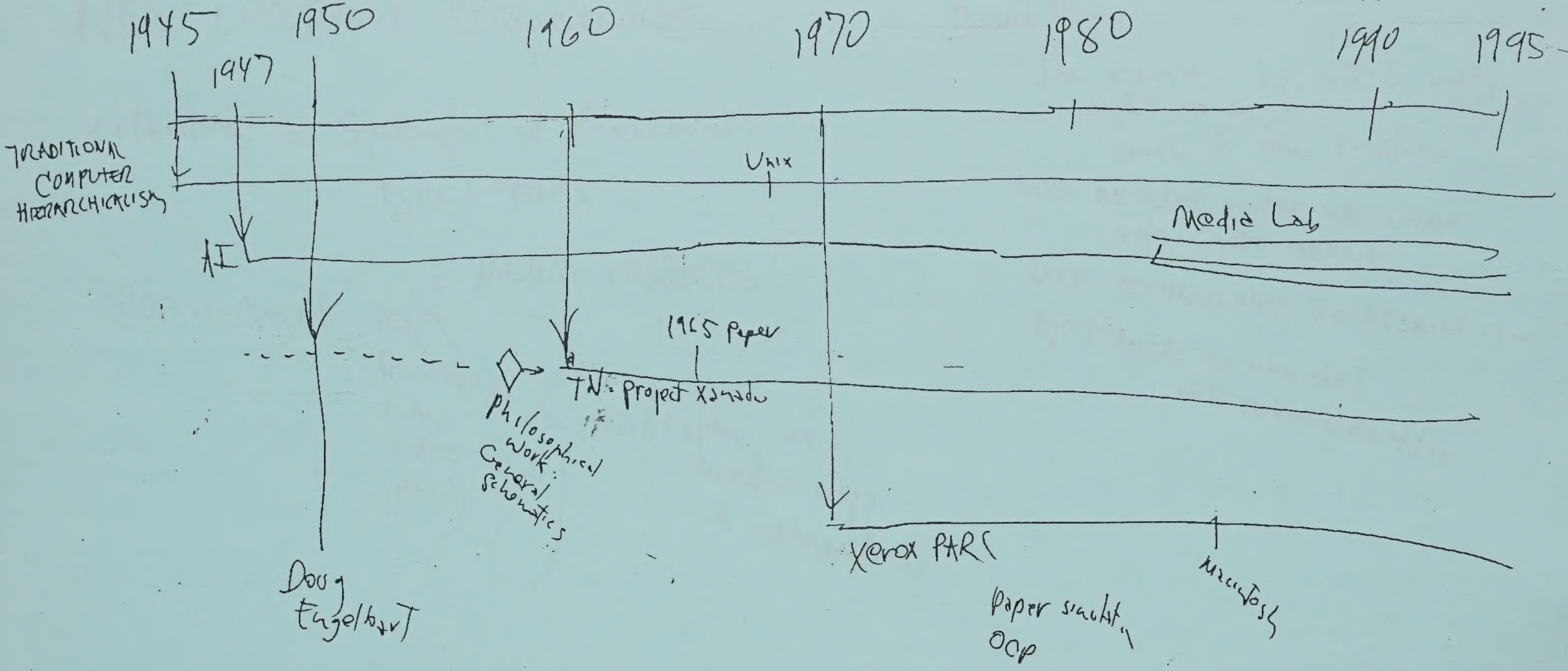
3 HUMAN UNDERSTANDING ⟵ Hume
4 VERSION MANAGEMENT
5 COMPARISON OF TEXT
6,7 SIDE-BY-SIDE TEXT ... versus today's hypertext
8 ... TRANSPARALLEL MEDIA

9 TN History

10 TN MODEL: TWO TYPES OF INTERCONNECTION

11 ⟶ GENERAL SCHEMATICS (summary)

12, 13. THEMATICS ... AND KJ MODEL.


1945
1947
1950
1960
1970
1980
1990
1995
TRADITIONAL COMPUTER HIERARCHICALISM
Unix
AI
Media Lab
1965 Paper
TN: Project Xanadu
Philosophical Work: General Schematics
Doug Engelbart
Xerox PARC
Paper simulat'n, OOP
Macintosh

1412
1440
1460
1480

2

NEW LITERARY STRUCTURES

Literature ≡ System(s) of (connected) DOCUMENTS

≡ MEDIA OBJECTS!

20th-Century Lit:
- Text
- Recordings
- film
- video
- poetry

} collection of media objs & connections

David Hume:

"The reason is, and by rights ought to be, slave to the emotions."

WE DECIDE WHAT WE WANT AND CARE ABOUT,

USE TECHNOLOGY TO ATTAIN IT—

NOT decide to care about what technologists offer.

have
prepo
the
concept
Sociology of lit. = new object [illegible]

Document

[illegible] = object) or (meaning)

How literature [illegible]

Not [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

5

HUMAN
UNDERSTANDING

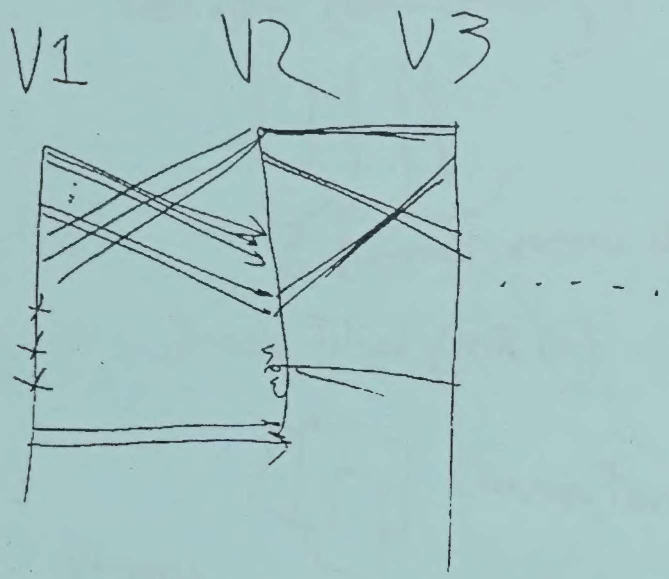
Compassion

↔

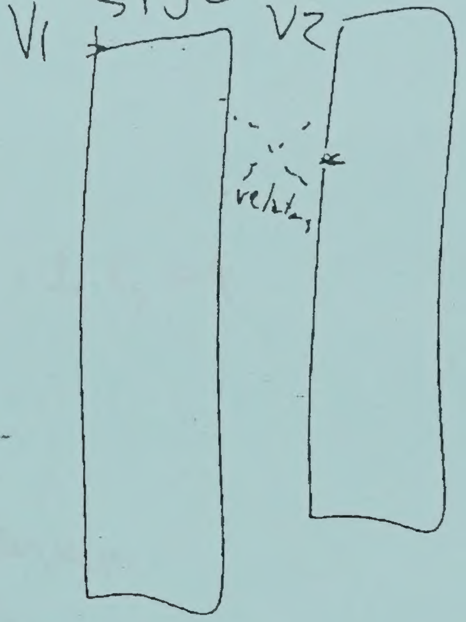
David Hume:
"The reason is, and by rights
ought to be,
slave to the emotions."

WE DECIDE WHAT WE WANT
AND CARE ABOUT,
USE TECHNOLOGY TO ATTAIN IT-
NOT decide to care about
what technologists offer.

VERSION MANAGEMENT IN WRITING

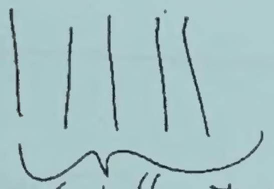


SIDE BY SIDE


V1
V2
relate,

COMPARISON OF TEXT

hexapla (6th Century)

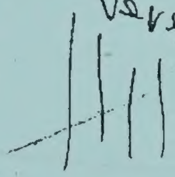


6 Different versions of Bible side by side

Jewish Talmud (10th C.)

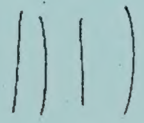
Commentaries interwoven on page

Variorum Shakespeare



Versions

Interpreter's Bible



What is the generalization?

[illegible] BTR ||||

Suppenbars ||||

[illegible]

Repeat

Conversation [illegible]

Sport lines (log [illegible])

[illegible]

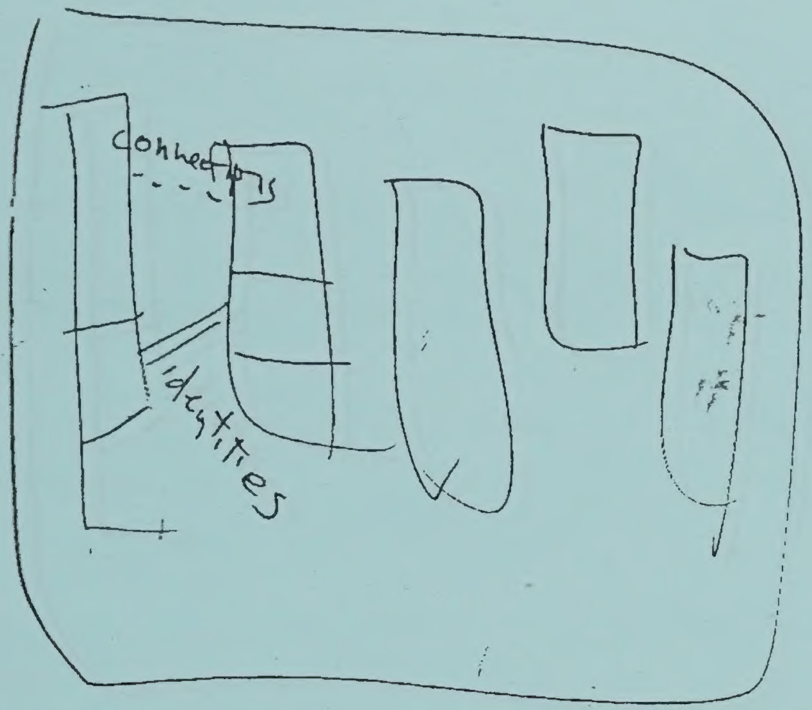
||||

[illegible]

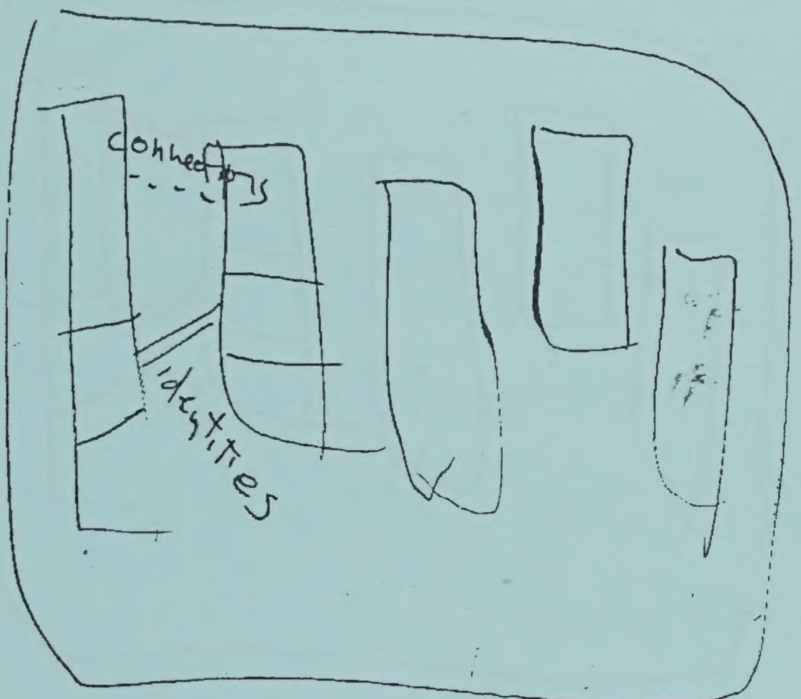
CONVERSATION ON [illegible]

[illegible]

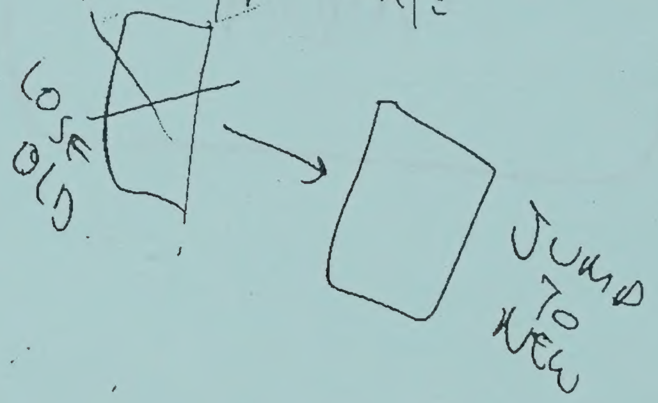
BEST GENERALIZATION = FORM OF WRITING
AND DISPLAY.
for
SIDE-BY-SIDE
INTERCOMPARISON.


connections
identities

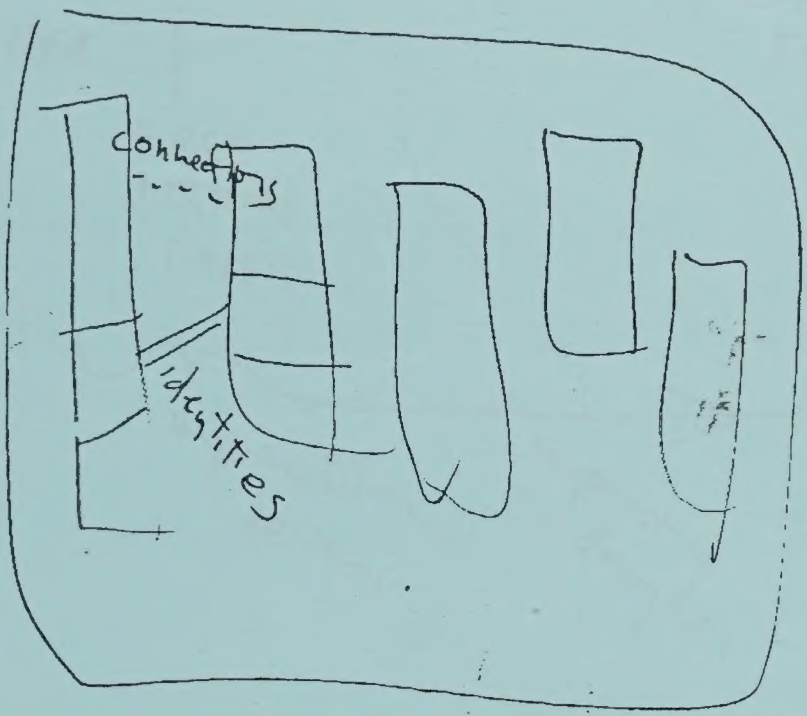
BEST GENERALIZATION = FORM OF WRITING
AND DISPLAY
for
SIDE-BY-SIDE
INTERCOMPARISON.


connections
identities

Today's hypertext:

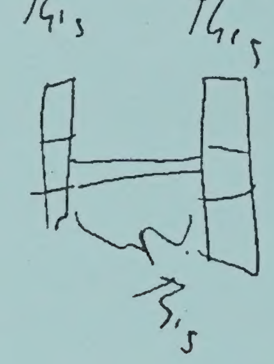

LOSE OLD
JUMP TO NEW

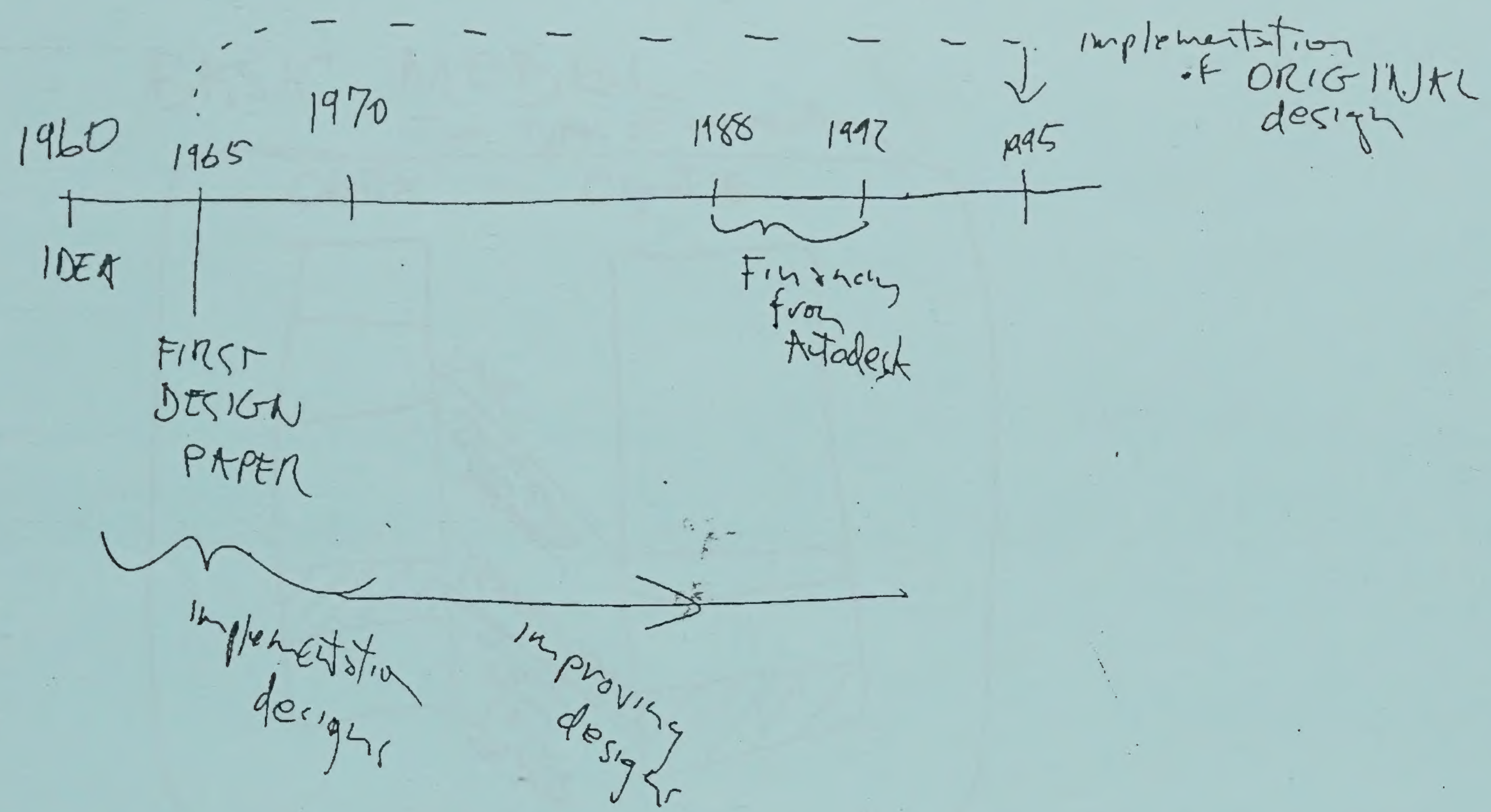
BEST GENERALIZATION = FORM OF WRITING
AND DISPLAY
for SIDE-BY-SIDE
INTERCOMPARISON.


connections
identities

"TRANSPARALLEL
MEDIA"

UNDERSTANDING
3 THINGS

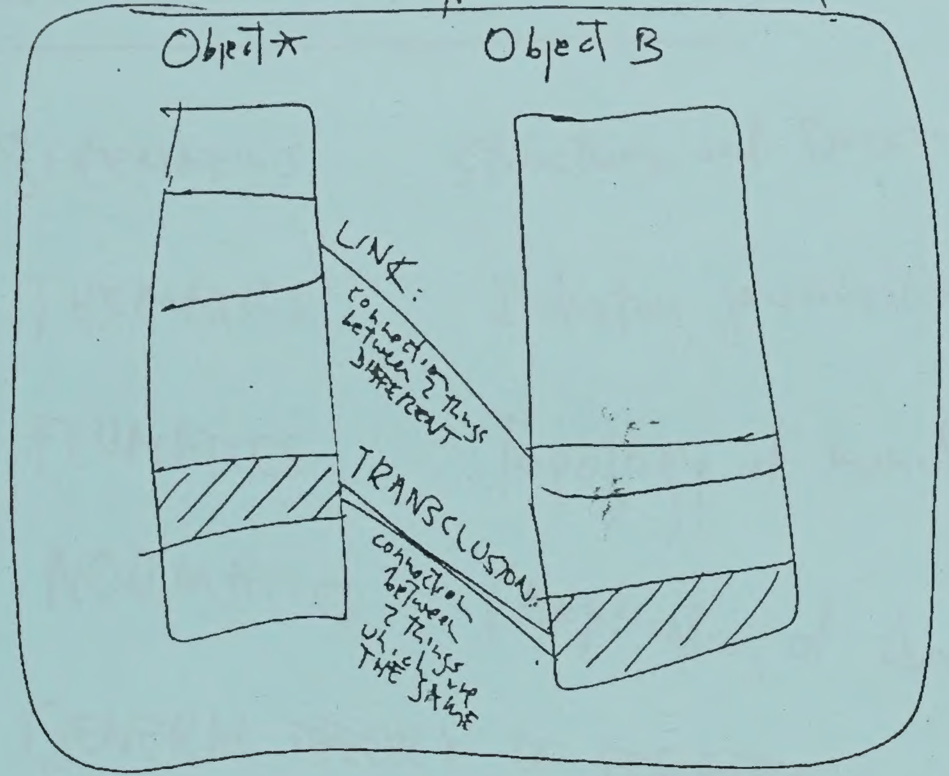

this
this
this


1960
IDEA
1965
FIRST DESIGN PAPER
1970
1988
1992
Financing from Autodesk
1995
implementation of ORIGINAL design
implementation designs
improving designs

1654
1650

BASIC MODEL:

Two typos of connection


Object★
Object B
LINK:
connection between 2 things DIFFERENT
TRANSCLUSION:
connection between 2 things which are THE SAME

GENERAL SCHEMATICS

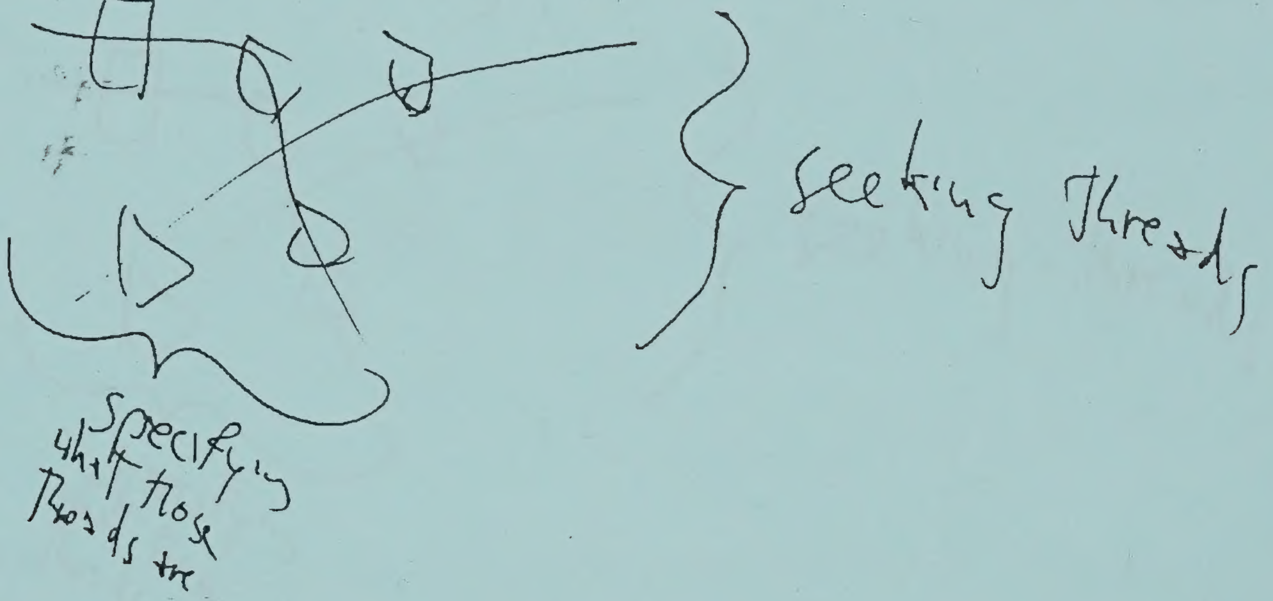
SCHEMATICS	Structure and Description and Modelling
THEMATICS	Induction, generalization Specification, definition, (abduction)
FLUMATICS	Topology of manifolds of resemblance
NORMATICS	(Application of above to planning, moral Theory...)

GENERAL THEORY OF STRATEGY.

THEMATICS: induction & definition

Principal method:

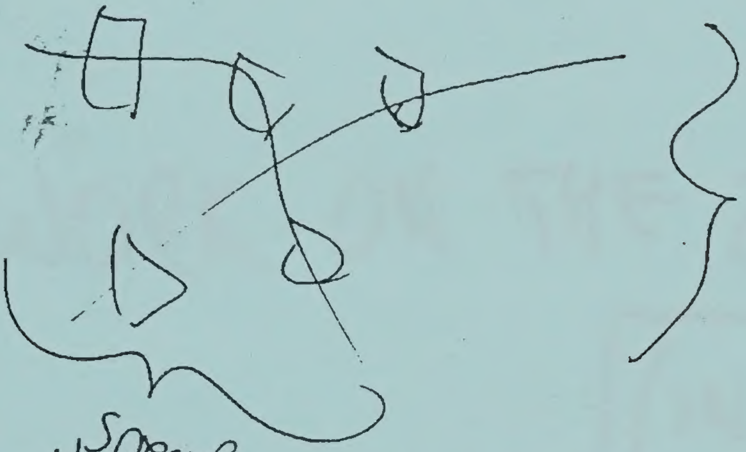
TAKING EXAMPLES


seeking threads
Specifying
what those
threads are

THEMATICS: induction & definition

Principal method:

TAKING EXAMPLES


seeking threads
Specifying what those threads are

Scientific generalization
KJ method
musical criticism
⋮
DESIGN

MTG AUG 8 1995 0

Tanaka,
Ookubo,
Takebe,
Hidaka.
(TN semi-present.)

Continuing

DESIGN WORK ON THE ZIP EDITOR.

(IN JAPANESE.)

AUG 8 1995

① History

② Link

③ Version [View]

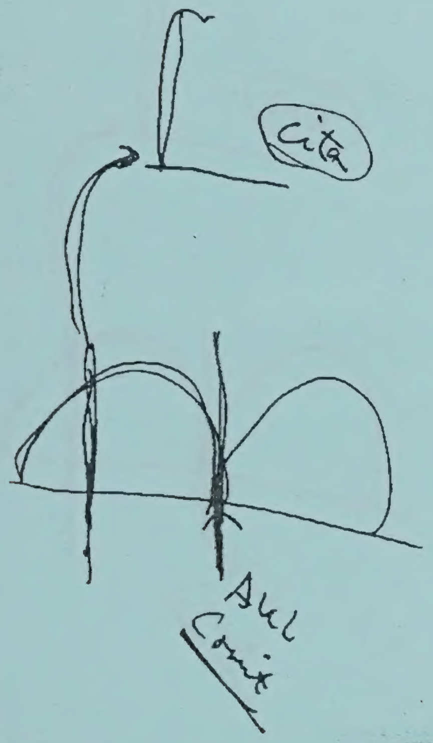
④ Project

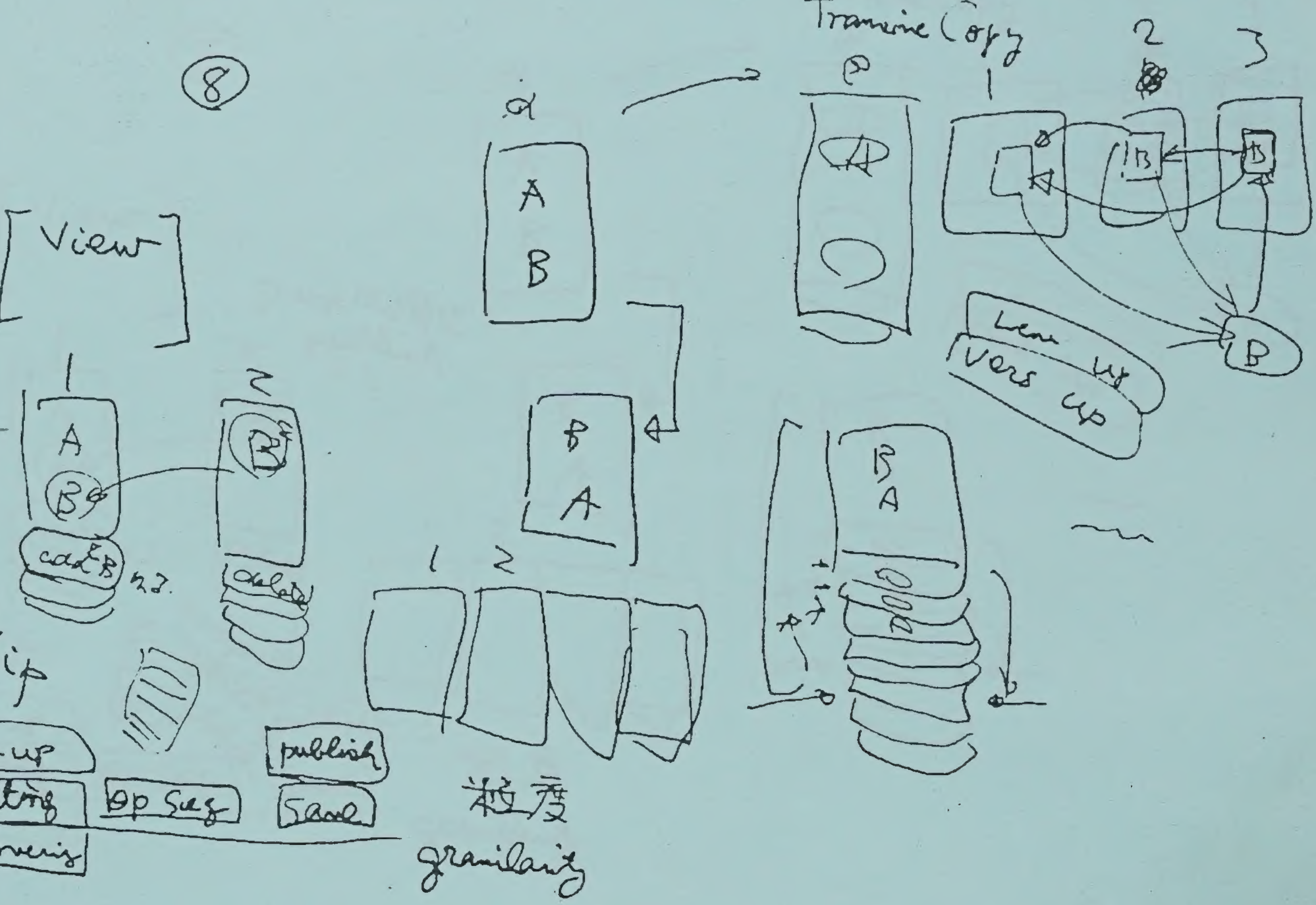
⑤ Outline

⑥ Journal Zip

⑦ Overview

⑧


cita
All Commit


1
2
A
B
add B
delete
Len up
editing
Op Seq
recovering
publish
Save
粒度
granularity
α
A
B
B
A
1
2
β
Transient Copy
1
2
3
B
B
Len up
Vers up
B
B
A

AUG 8 1995 2

① History

② Link

③ Version [View]

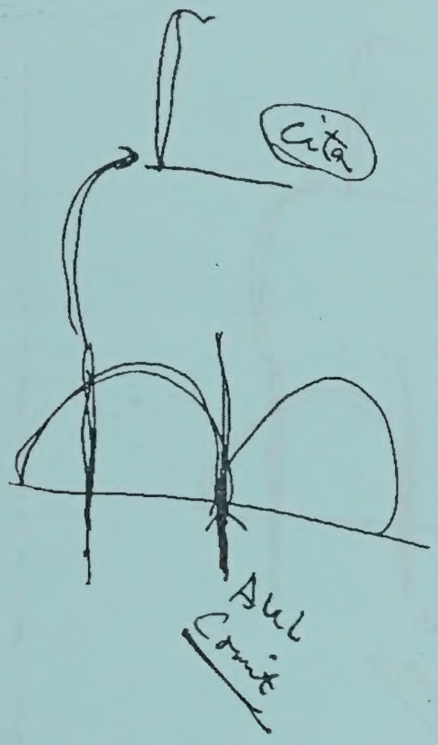
④ Project

⑤ Outline

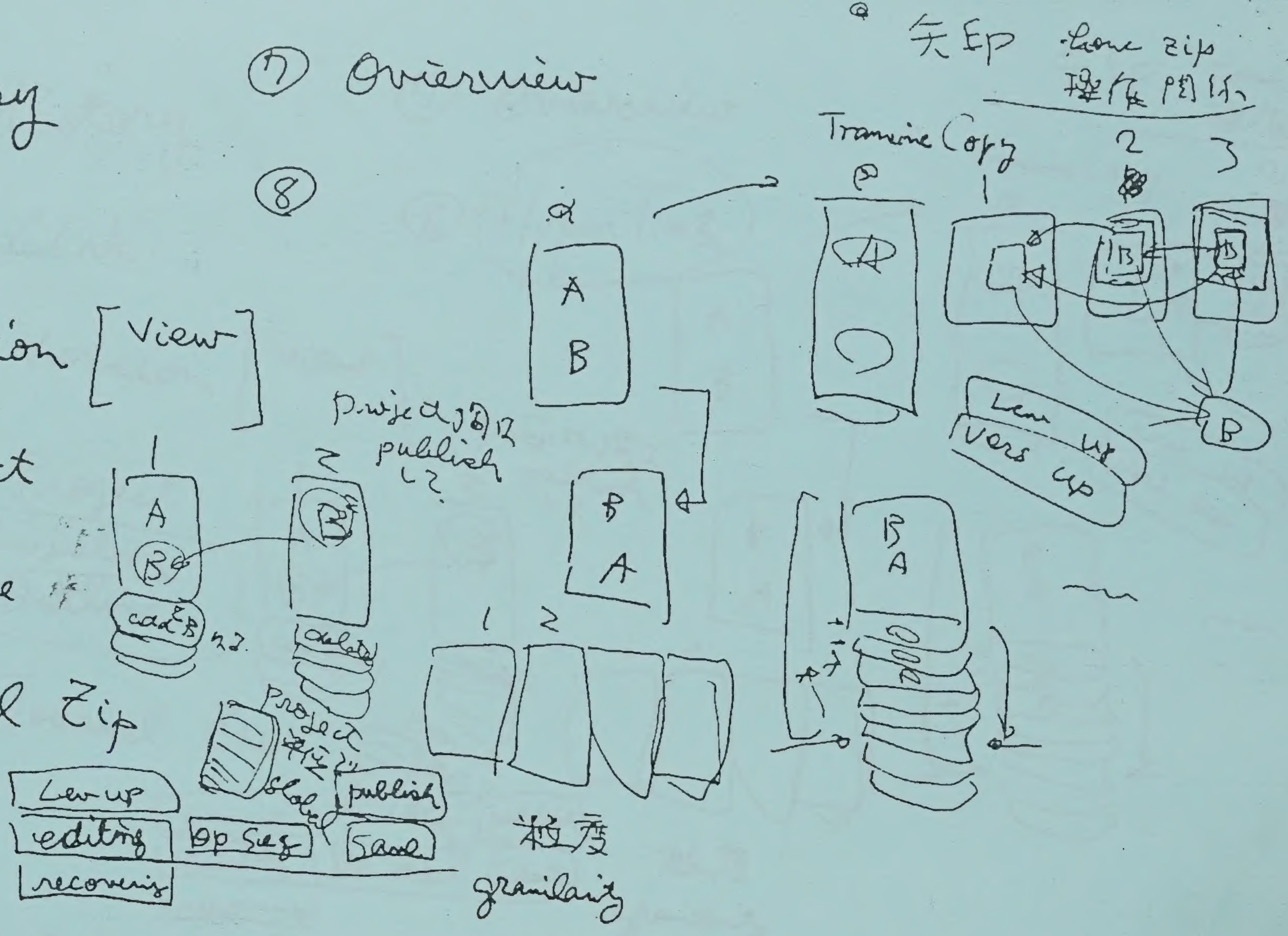
⑥ Journal Zip

⑦ Overview

⑧



Cita
AUL
Commit



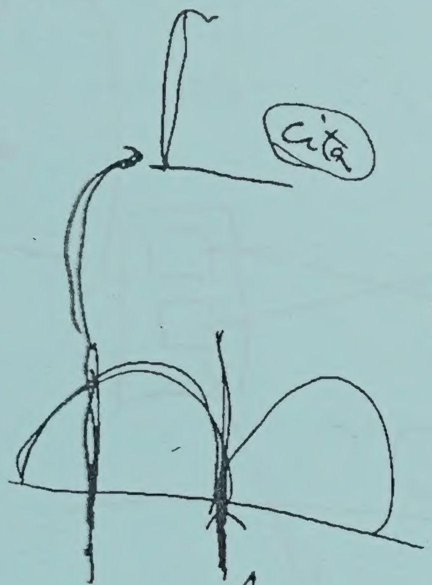
矢Ep Lone zip
操作関係
Tramine Copy
1
2
3
α
β
A
B
Project 间 publish
1
2
A
B
add B
delete
Project 单位
global
publish
Save
Lev up
editing
Op Seg
recovering
粒度
granularity
Lev up
Vers up

AUG 8 1995

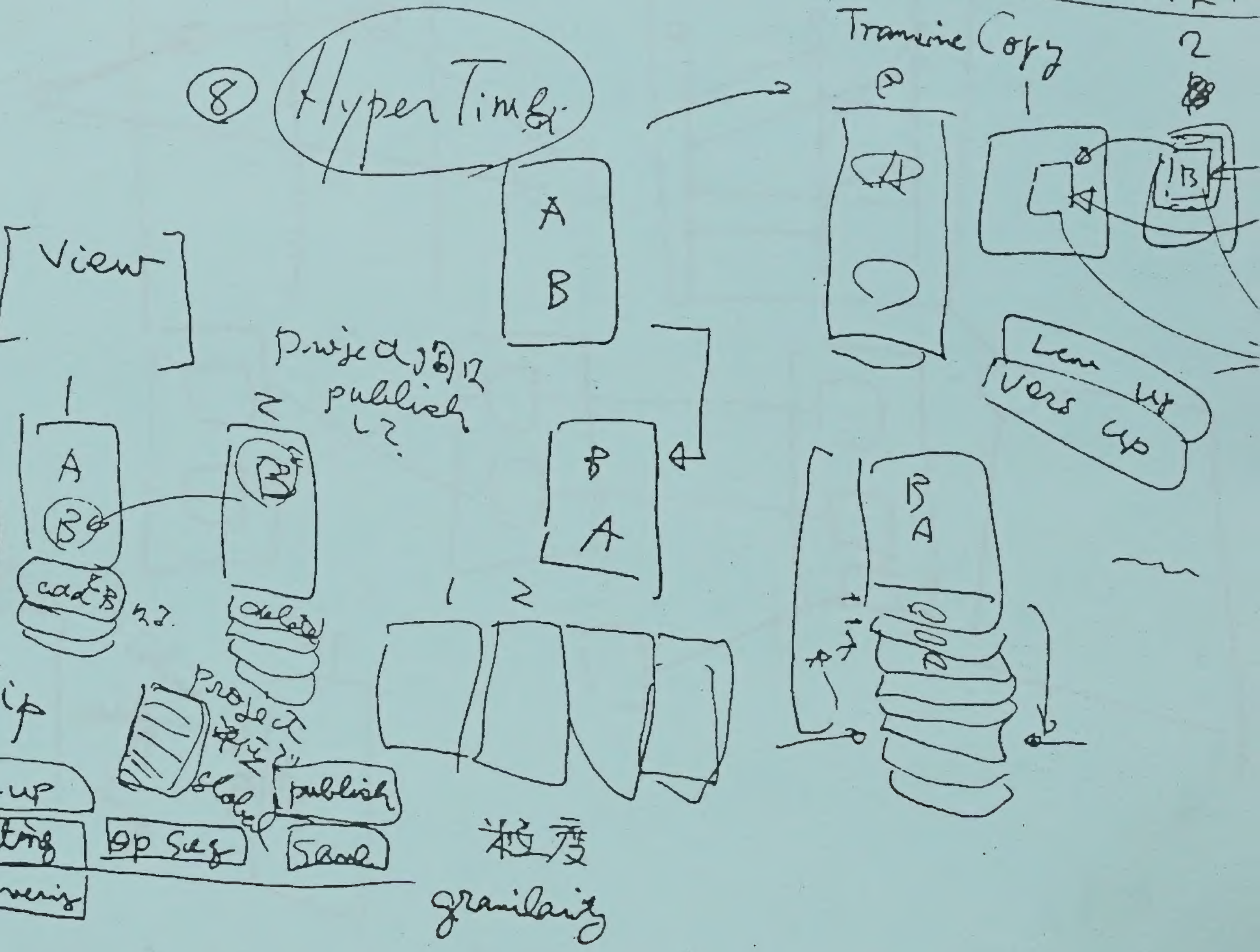
矢Ep Love ?
操作 p

① History
② Link
③ Version [View]
④ Project
⑤ Projection
Outline
⑥ Journal Zip

⑦ Overview
⑧ HyperTime



Abl
Comit

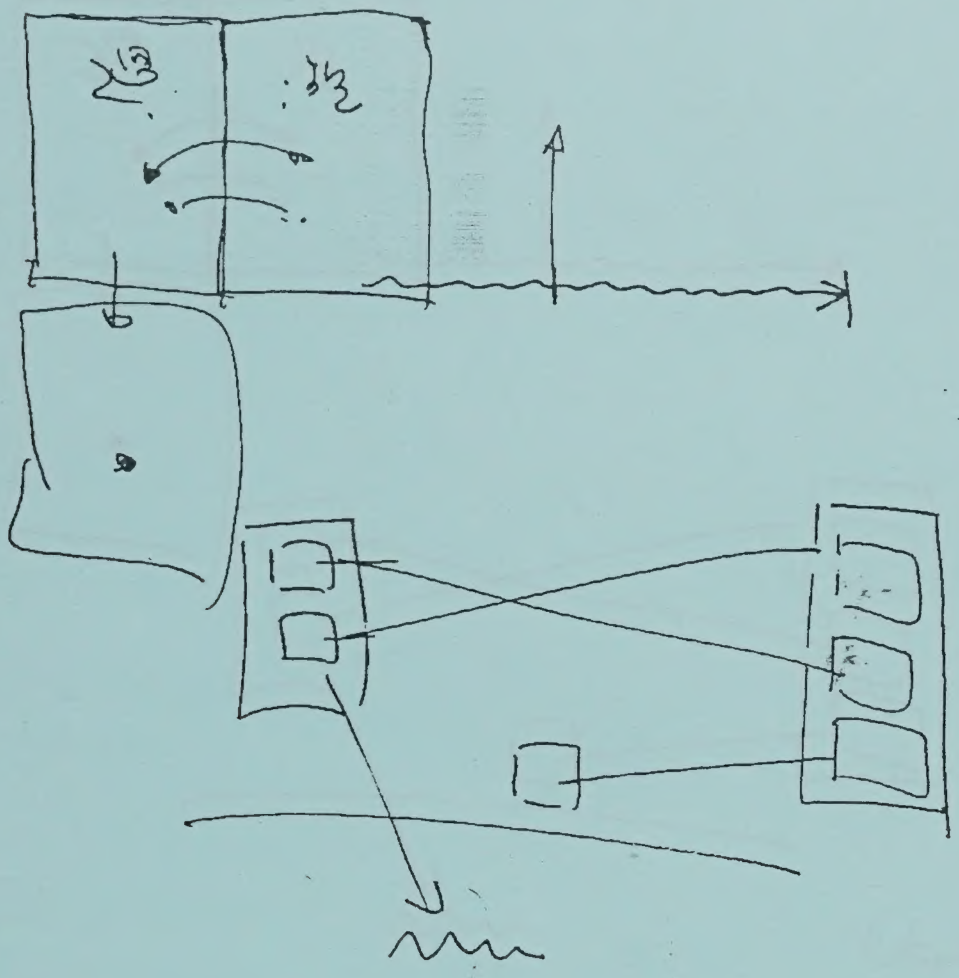


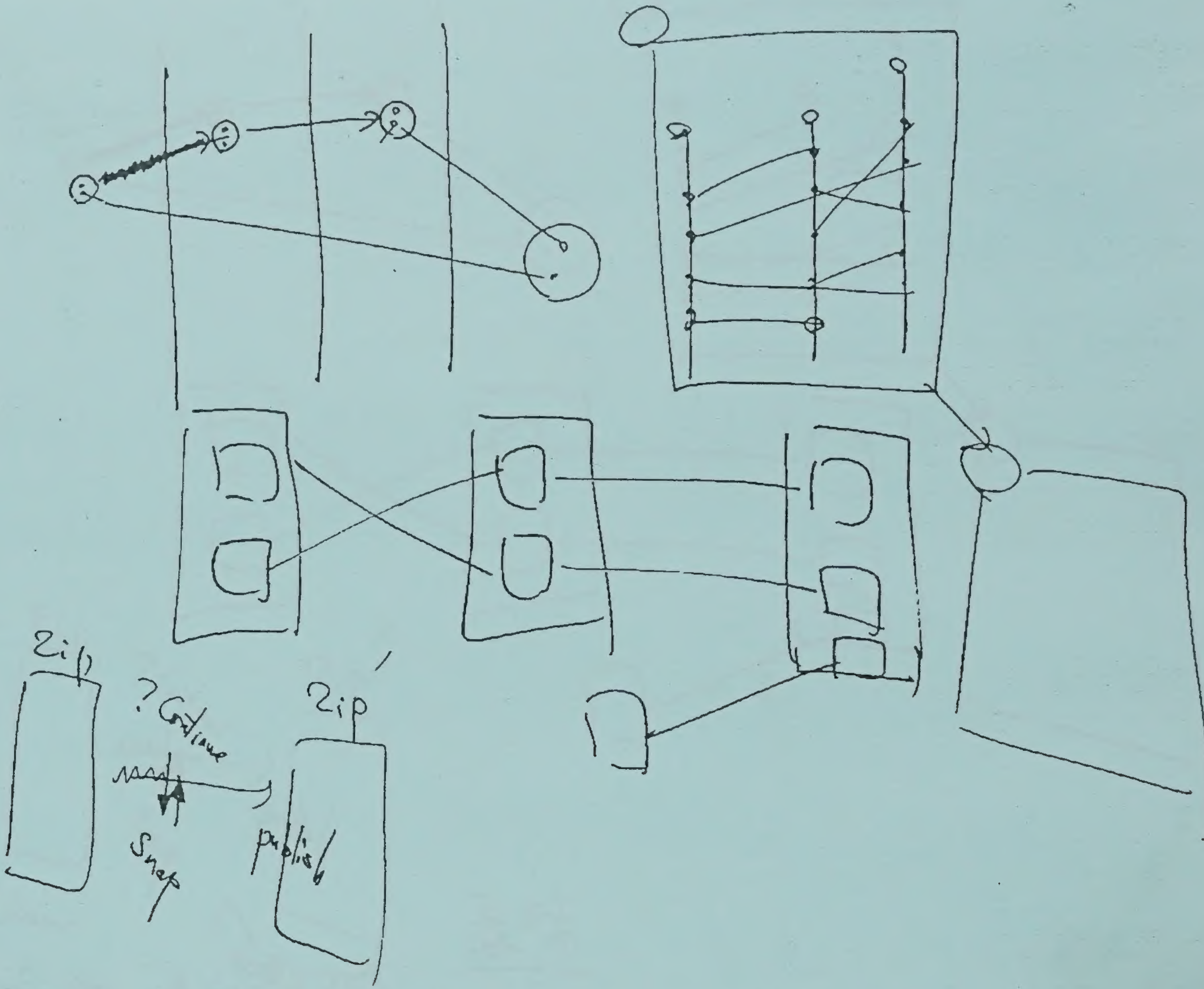
Tramine Copy
1
2
A
B
Lew up
Vers up
Project 2
publish
1
2
add B
delete
Project
publish
Lew-up
editing
op Seg
Scale
recovering
粒度
granularity

8/12 7pm
8/17(木) 7pm Projection

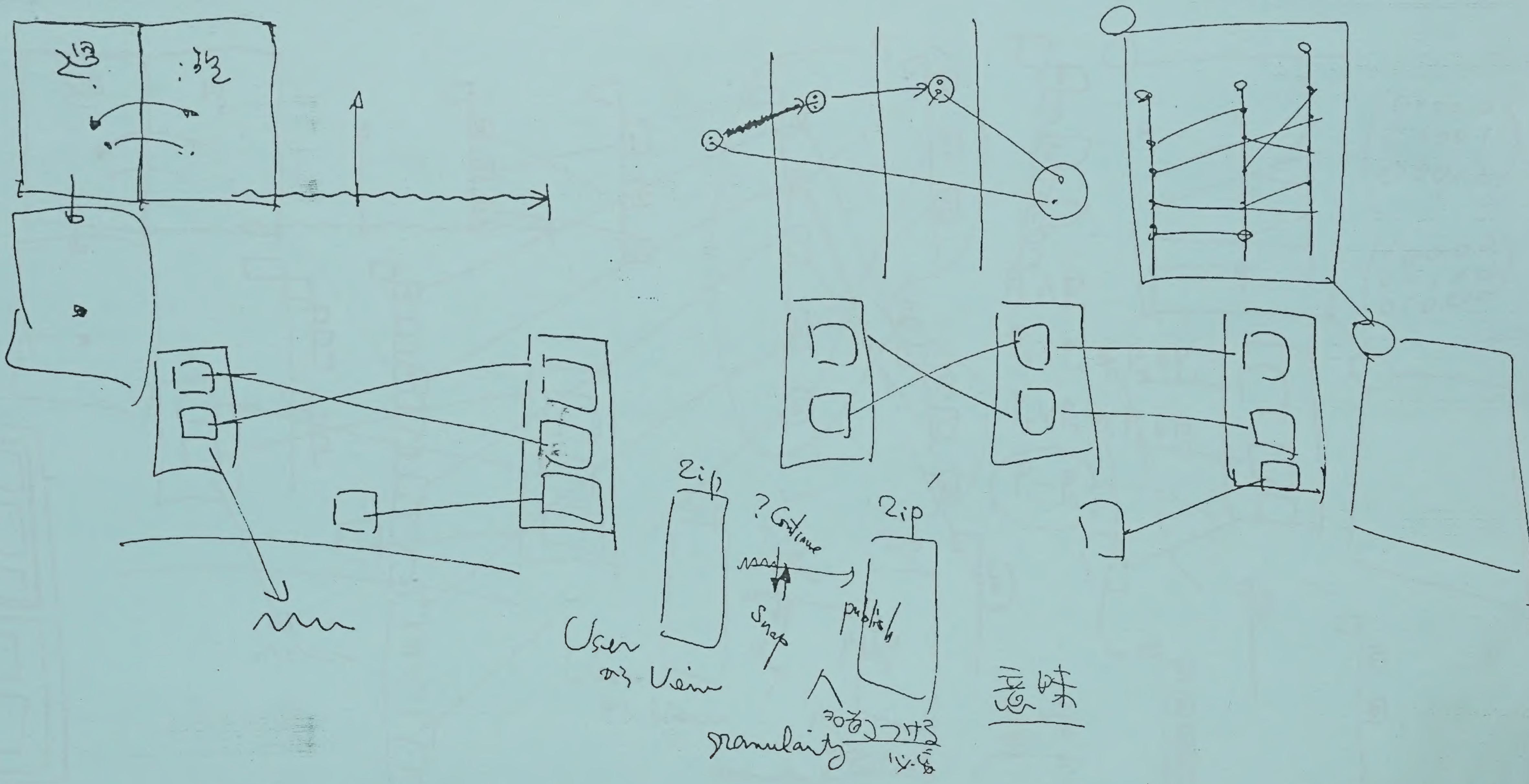
Samsung S4

AUG 8 1995 4

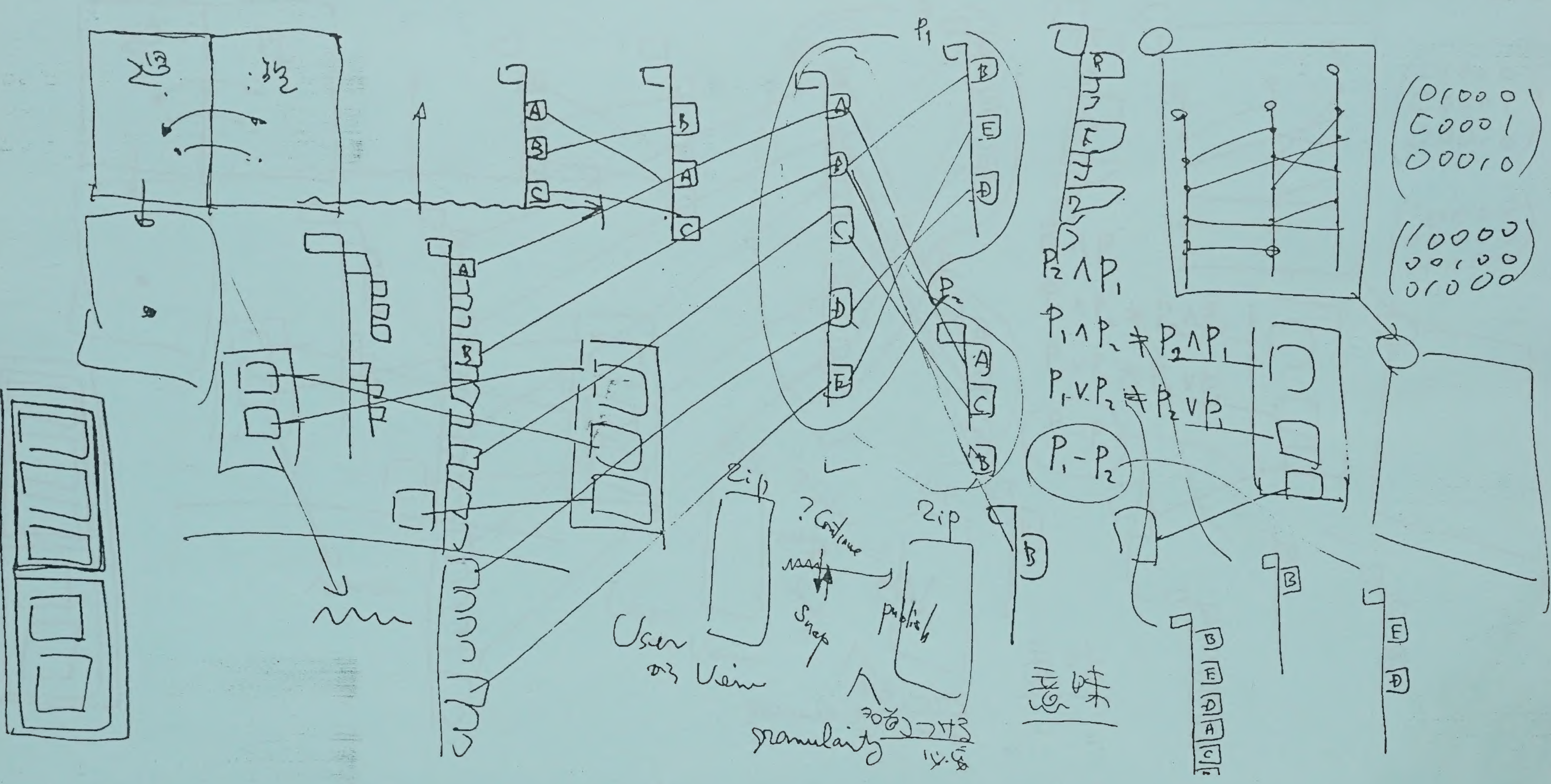



Zip
? Continue
Snap
Zip
publish

AUG 8 1995 5

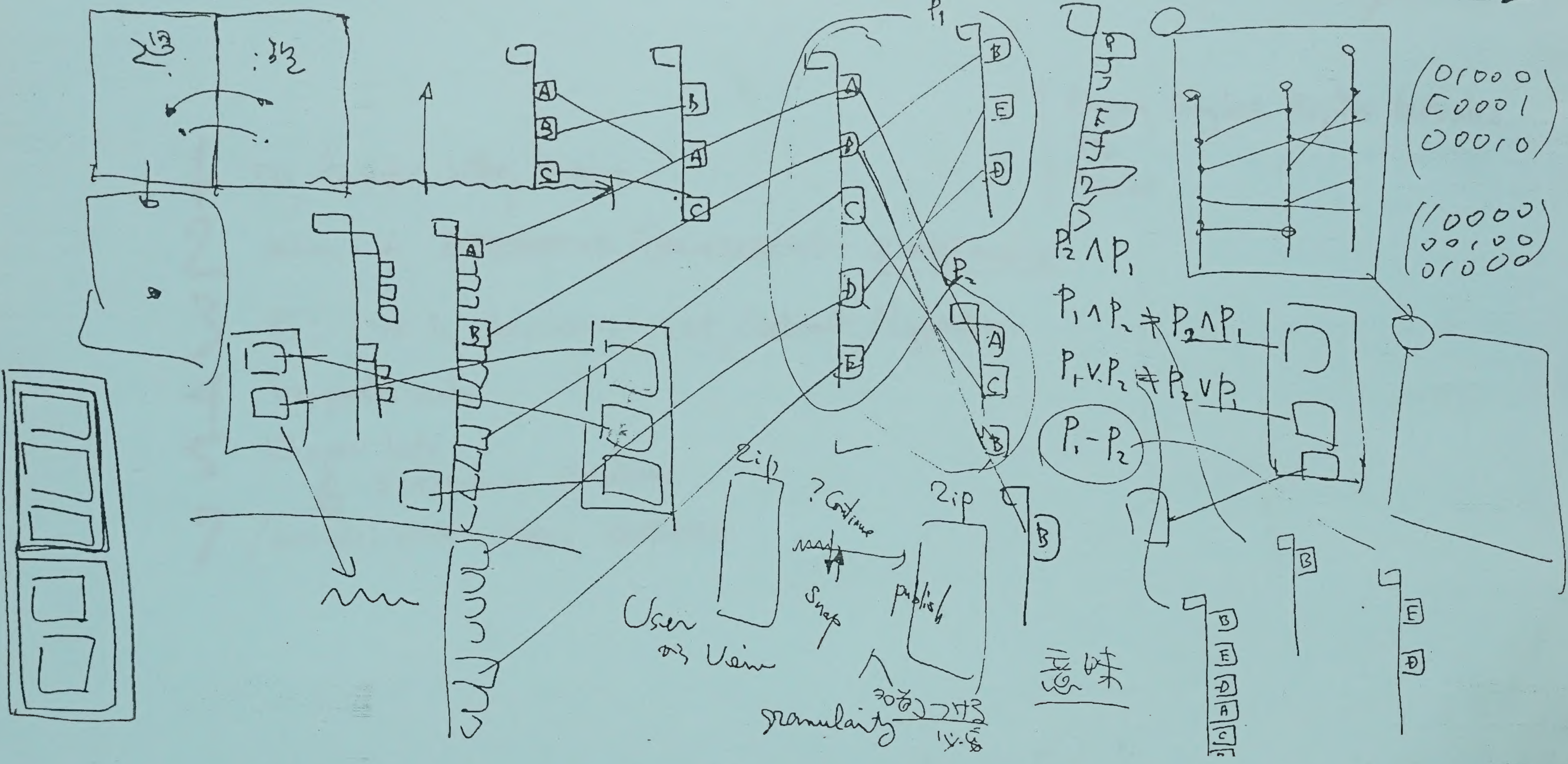

過
現
zip
User から View
? Continue
Snap
zip
publish
プロ名つける
granularity
必要
意味

AUG 8 1995 6



P1
P2
A
B
C
D
E
$P_2 \land P_1$
$P_1 \land P_2 \neq P_2 \land P_1$
$P_1 \lor P_2 \neq P_2 \lor P_1$
$P_1 - P_2$
0 1 0 0 0
0 0 0 0 1
0 0 0 1 0
1 0 0 0 0
0 0 1 0 0
0 1 0 0 0
zip
?Continue
Snap
zip
publish
User の View
granularity
ひもつける
必要
意味

AUG 8 1995


過
現
A
B
C
B
A
C
P1
P2
A
B
C
D
E
B
E
D
A
C
B
$P_2 \wedge P_1$
$P_1 \wedge P_2 \neq P_2 \wedge P_1$
$P_1 \vee P_2 \neq P_2 \vee P_1$
$P_1 - P_2$
0 1 0 0 0
C 0 0 0 1
0 0 0 1 0
1 0 0 0 0
0 0 1 0 0
0 1 0 0 0
zip
? Continue
Snap
zip
publish
User の View
granularity
[illegible]
必要
意味
B
B
B
E
D
A
C
E
D

MTG SEP 29 1995 0

Sanjay Singhai, Fujitsu Australia
TN
Takebe

1 TN/Computer history timeline

2 problem of REPRESENTING/COMPRESSING all relationships

3 HT; link & transclusion; edit/network/hypertime

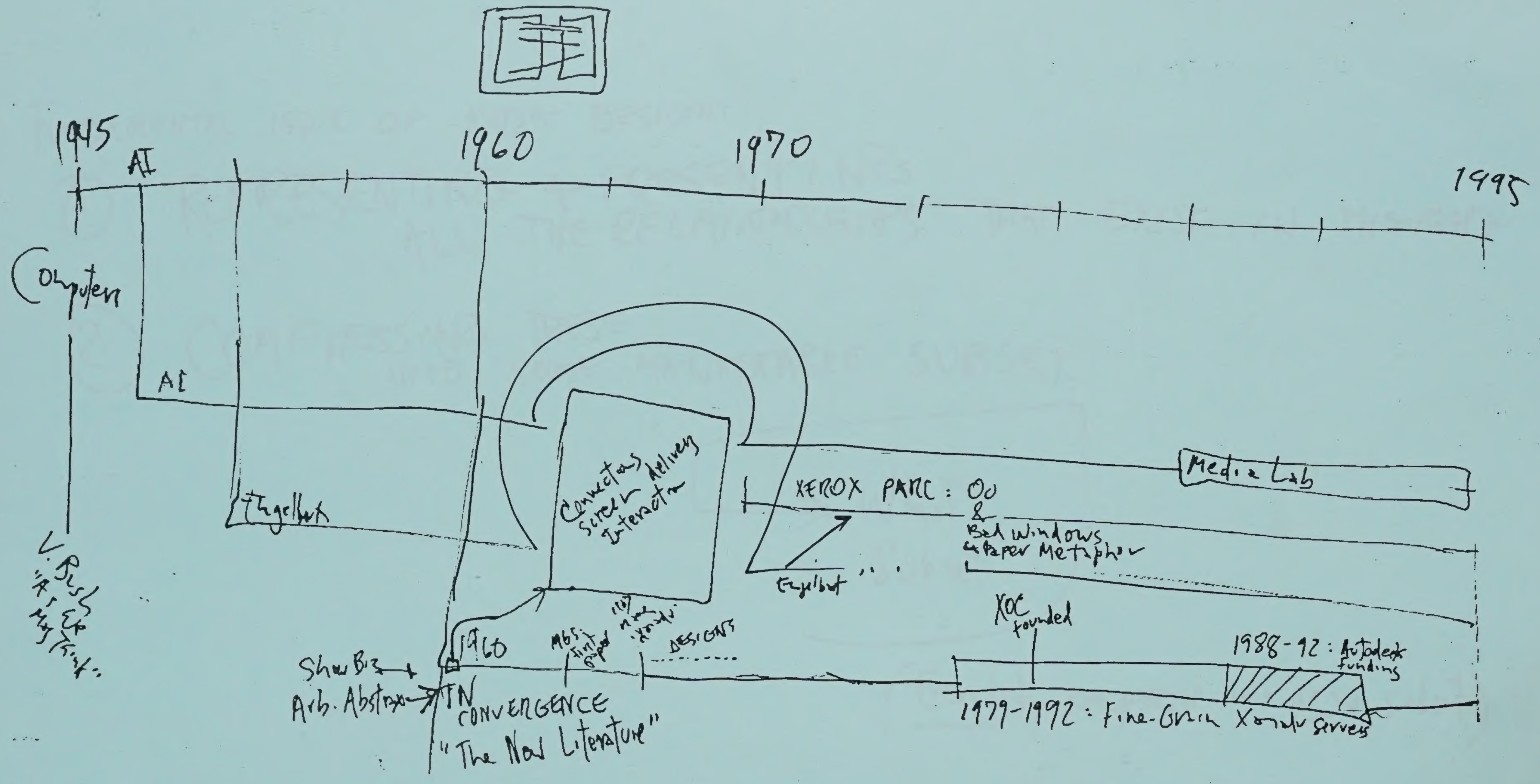
4 Transparallel media

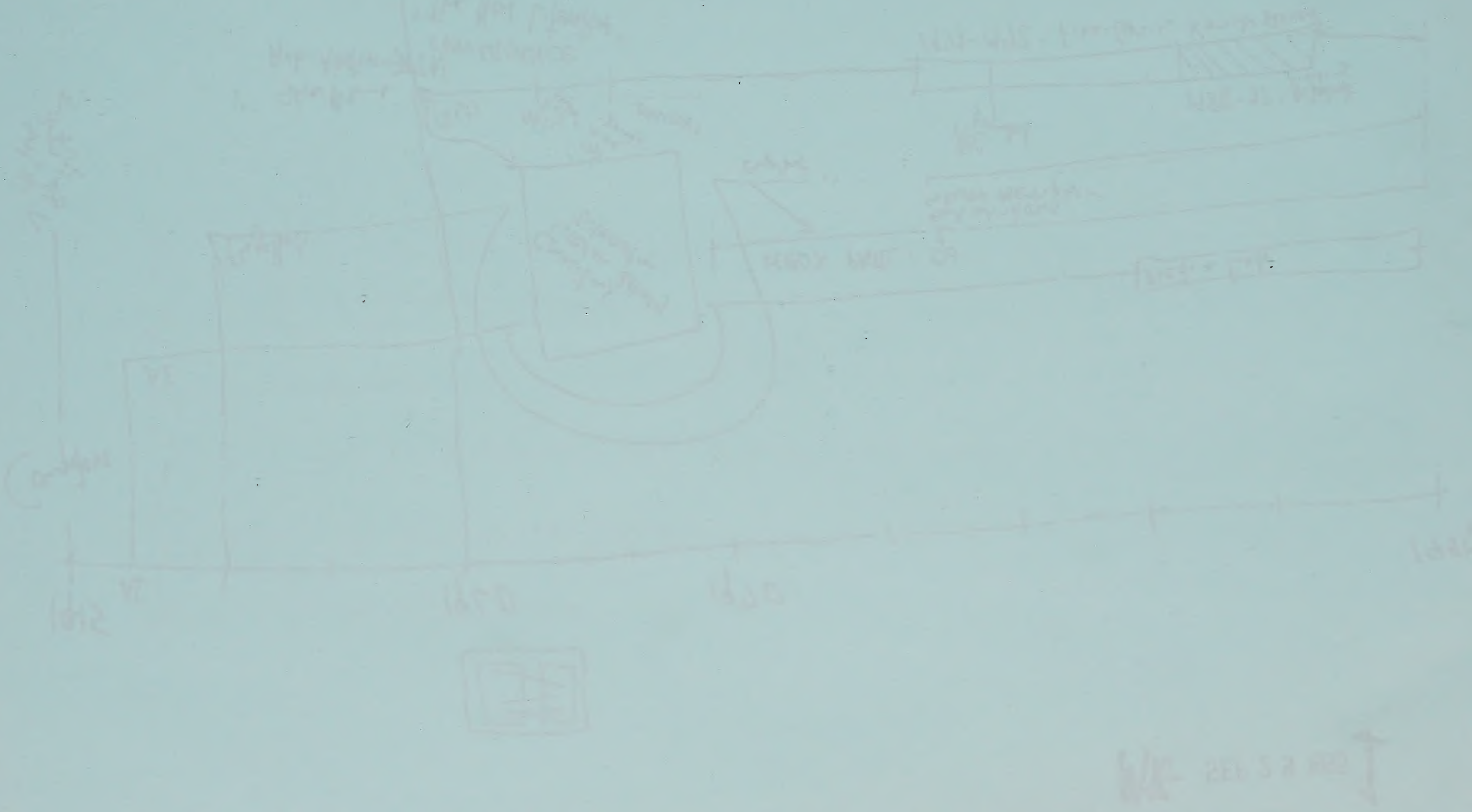
5 Zipper lists

6 Hyperarchical Structures

7 (Xanadu) FINE GRAIN SERVERS

SEP 29 1995 1


1945
AI
1960
1970
1995
Computer
AI
V. Bush "As We May Think"
Engelbart
Connections Screen delivery Interaction
Media Lab
XEROX PARC: Oo & Bad Windows & Paper Metaphor
Engelbart . . .
Show Biz
Arb. Abstrxn
TN
CONVERGENCE
"The New Literature"
1960
1965: first paper
1967 name "Xanadu"
DESIGNS
XOC founded
1988-92: Autodesk funding
1979-1992: Fine-Grain Xanadu Servers


1612
1670
1650
1682

MTG SEP 29 1995 2

FUNDAMENTAL ISSUE OF MEDIA DESIGN:

① REPRESENTING & PRESENTING ALL THE RELATIONSHIPS THAT EXIST IN THOUGHT

② COMPRESSING THESE INTO SOME MANAGEABLE SUBSET.

→ What subset

(Everybody compresses into some subset)

MTG SEP 29 1995

Hypertext : NON-SEQUENTAL WRITING

TWO FUND. RELATIONS:

LINK : (some user-specified) connection between Things which are different

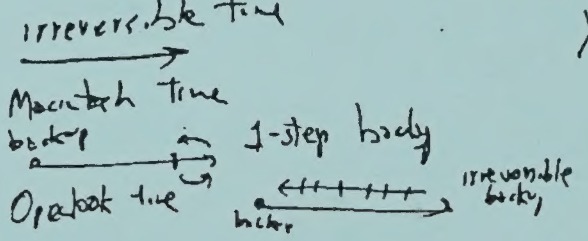
TRANSCLUSION : (system-maintained) " THE SAME

Problem is showing & maintaining these connections ACROSS EDIT CHANGES

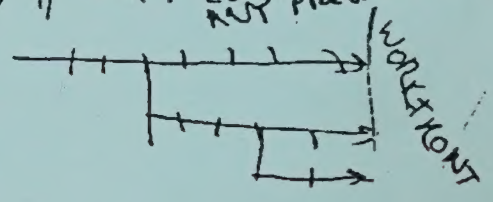
ACROSS A NETWORK

Single-user system is a simplified model.

Defined in terms of media space-time: HYPERTIME, where the past is always present.


irreversible time
Macintosh time
backup
1-step backup
Openbook time
irrevocable backup

Xu H'time : CAN ALWAYS CONNECT TO ANY PREV. VERSION

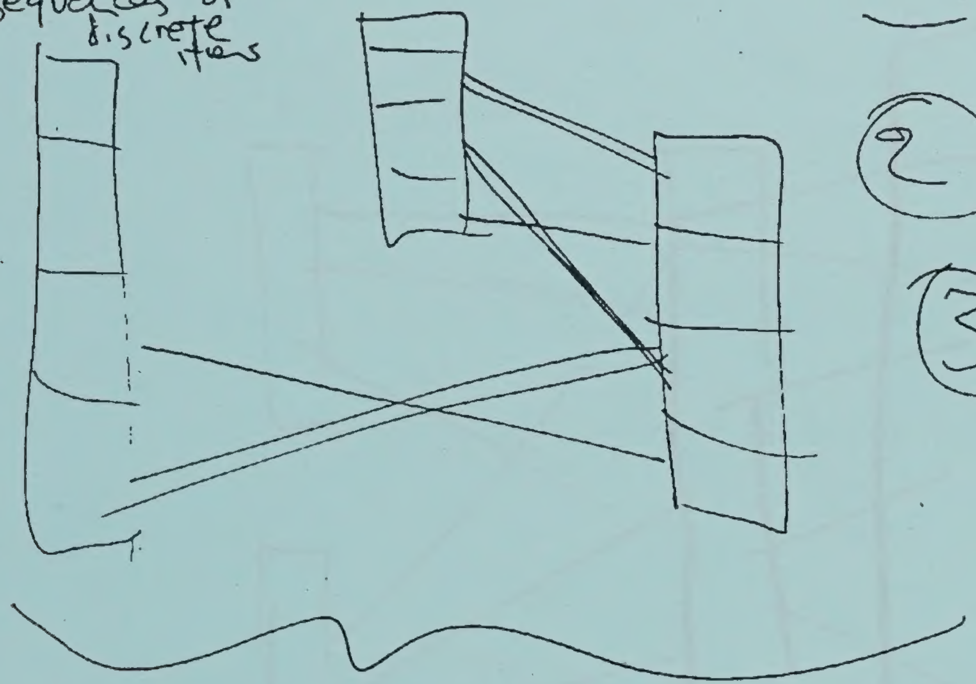


/MTG 29.9.95

MTG SEP 29 1995 5

ZIPPER~~(ed)~~ LISTS, 1965

ZIPS: sequences of discrete items



UNIVERSE OF SIDEWAYS - CONNECTED LISTS

① THREE RELATIONS
(sequence)
= transclusion
— link

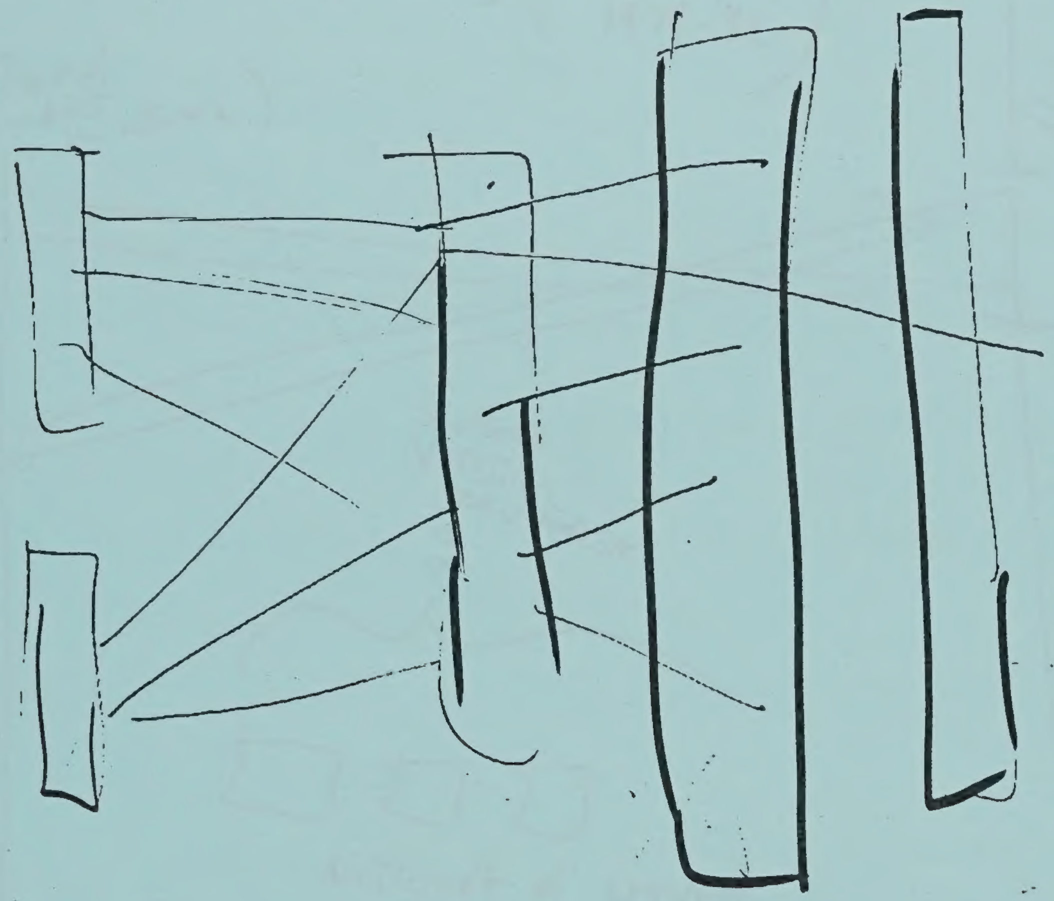
② NO OVERLAP

③ Each cell can connect to 0 or 1 cell in each other zip.

ZIPS AS BUILDING BLOCK for ARRAYS HYPERARCHICAL STRUCTURES

MRG SEP 29 1995 6

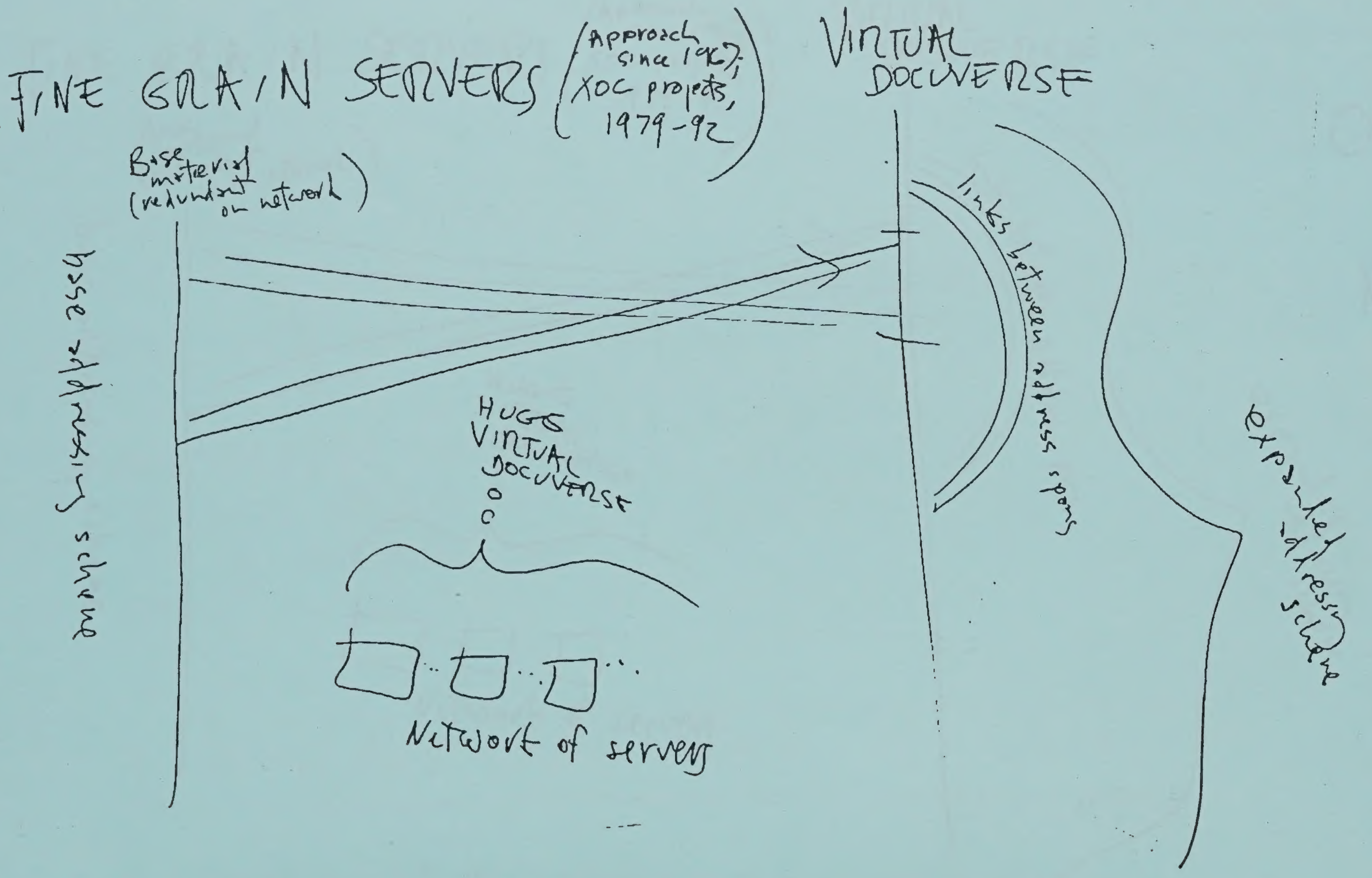
HYPERARCHICAL STRUCTURES THROUGH ZIPS



MTG SEP 29 1995

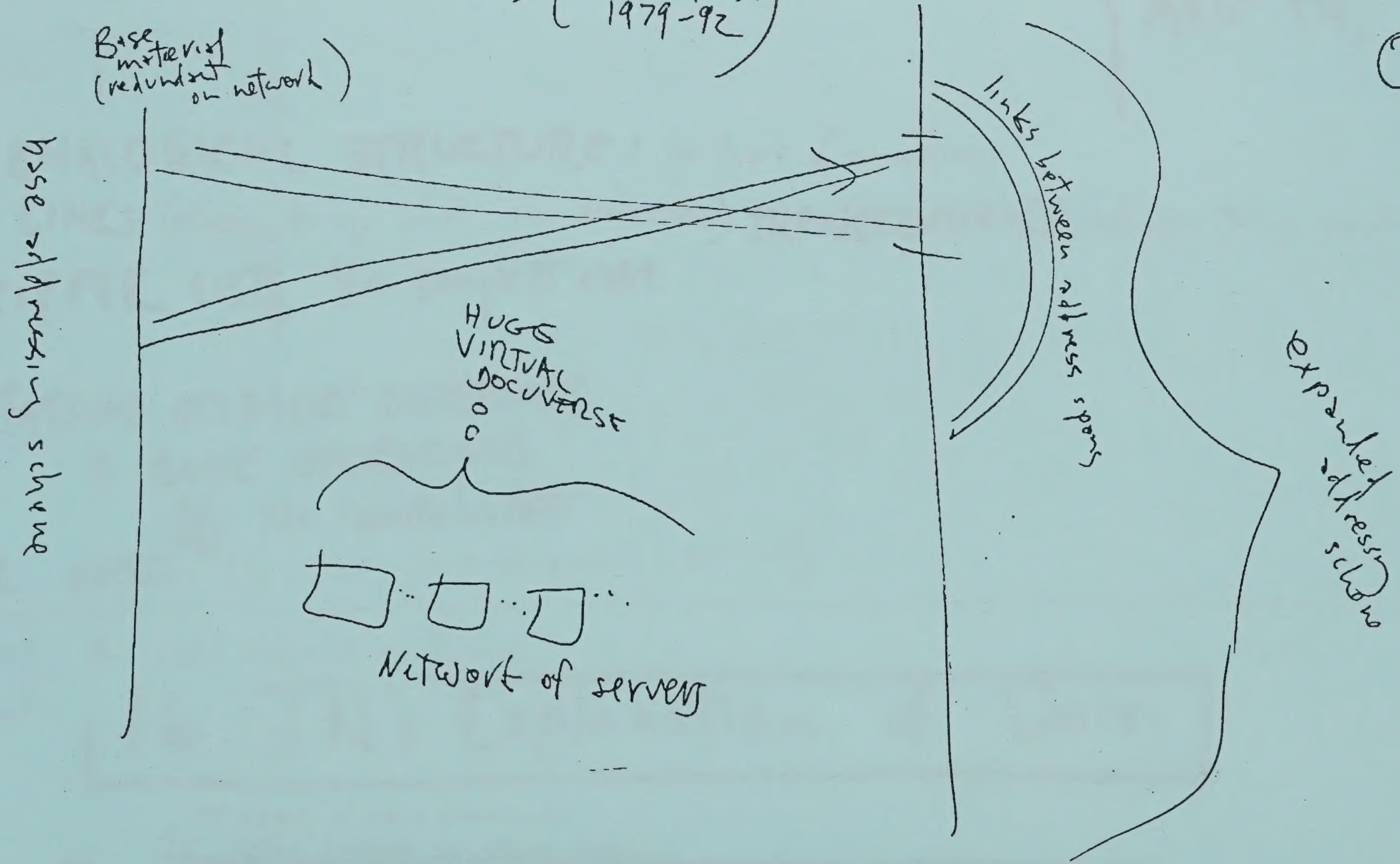
7

FINE GRAIN SERVERS (Approach since 1967; XOC projects, 1979-92)


VIRTUAL DOCUVERSE
Base material (redundant on network)
base addressing scheme
HUGE VIRTUAL DOCUVERSE
Network of servers
links between address spans
expanded address scheme

MTG SEP 29 1995 8

FINE GRAIN SERVERS (Approach since 1967; XOC projects, 1979-92)


VIRTUAL DOCUVERSE
Base material (redundant on network)
base addressing scheme
HUGE VIRTUAL DOCUVERSE
Network of servers
links between address spans
expanded address scheme

OVERLAP
IS
ALLOWED;
Networked
servers;
ACT OF
PUBLICATION,
CONDITION
& BOUNDARIES
OF
OWNERSHIP

[MEETING NOTES NB]

MTG JUN 1 9 1995 Ø

MTG Mr. K. Nishi, ASCII & TN

MTG TN, Mr. Asai, ASCII.

With Mr. Nishi

1 XANALOGICAL STRUCTURE: two types of connections
LINKS (between things which are DIFFERENT) TRANSCLUSIONS (between things which are THE SAME)

2 ZIPPER LISTS, the simplest case

6 'TATSUNO OTOSHIGO' INTERFACE
9 BASIC OPERATIONS
10 No 'wastebasket'

12 LEVELS: Unix, IP. (And temporarily: emacs).

With Mr. Asai

15 Usual Explanation of Unix.

16 TN's Explanation of Unix.

24 types of Unix Commands
25 BASIC SYNTAX OF UNIX SHELLS

26 WHAT IS A COMPUTER LANGUAGE?

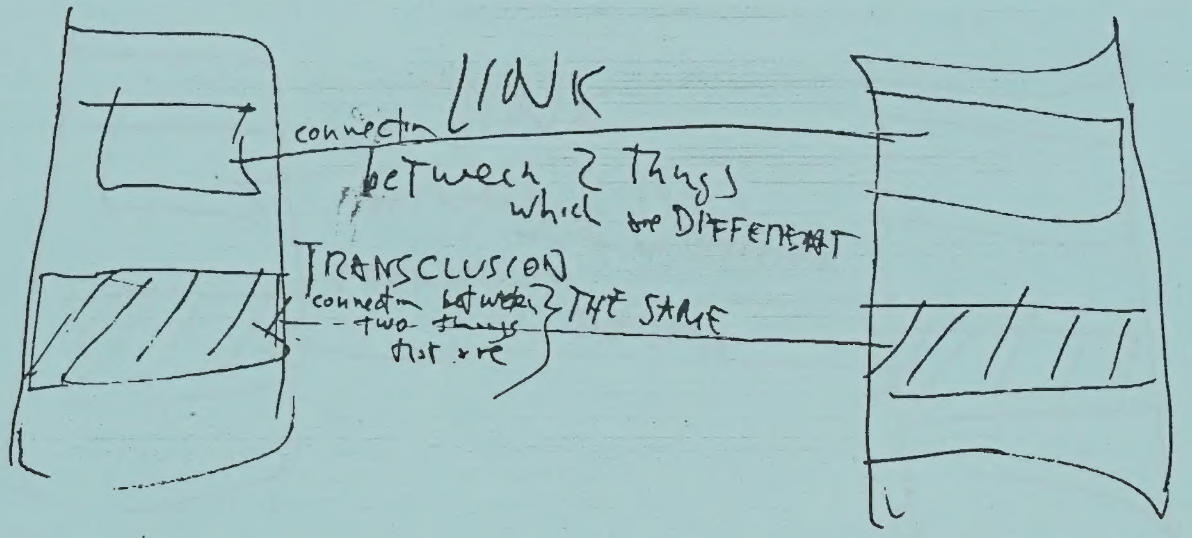
33 Tcl and Tk: WHAT THEY [illegible]E.
34 TCL PARSING.

MRG JUN 1 9 1995

XANALOGICAL STRUCTURE

not a Trade mark

TWO KINDS OF CONNECTION MAINTAINED BY THE SYSTEM:


LINK
connection between 2 things which are DIFFERENT
TRANSCLUSION
connection between two things that are THE SAME

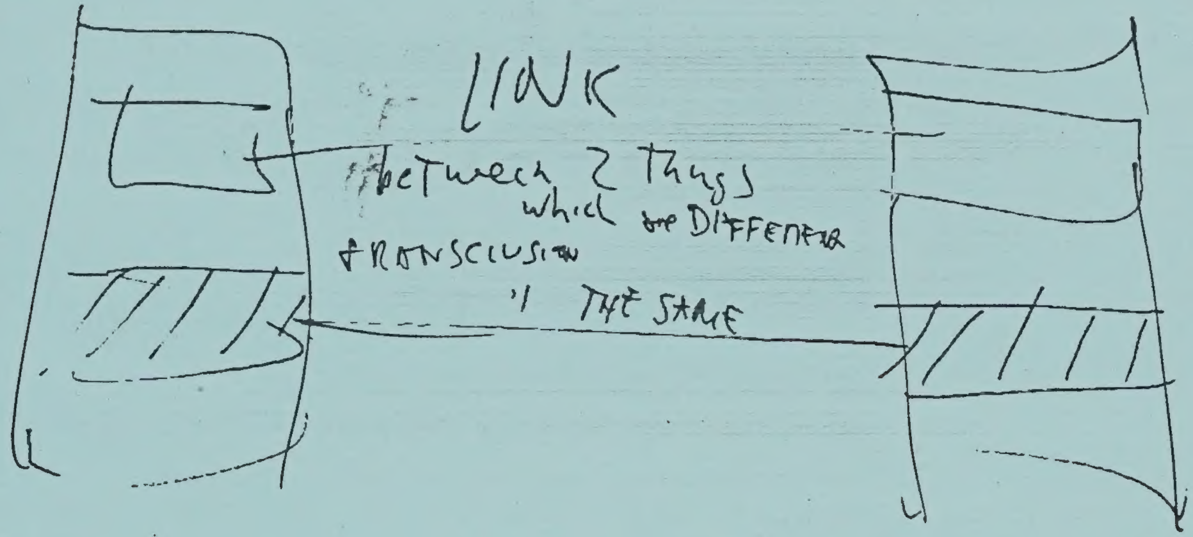
NTF JUN 19 1995 2

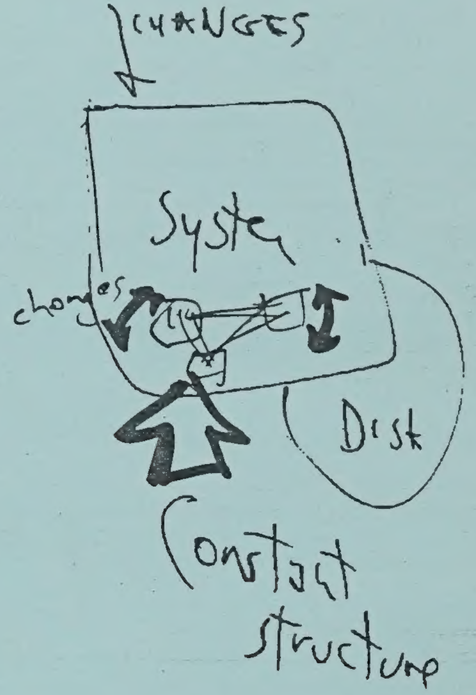
XANALOGICAL STRUCTURE

not a Trade mark

Xanalogical system
MAINTAINS
THESE CONNECTIONS

TWO KINDS OF CONNECTION

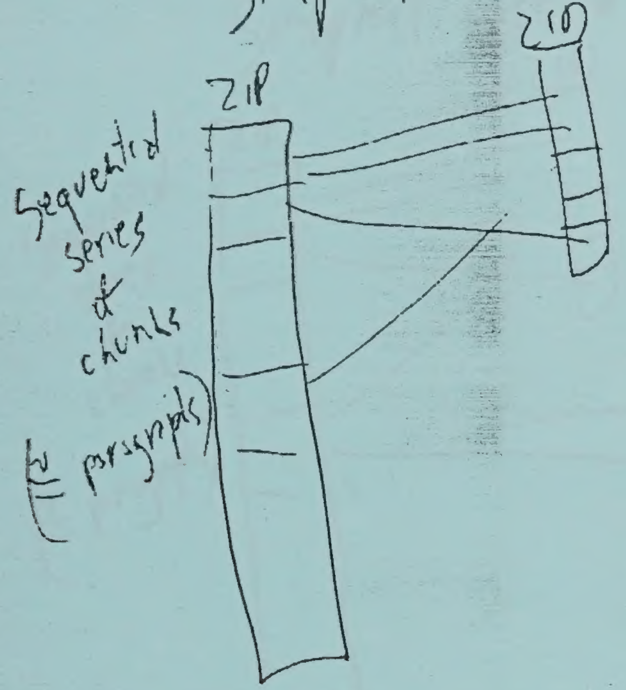

LINK
between 2 Things
which are DIFFERENT
TRANSCLUSION
'' THE SAME


CHANGES
System
changes
Disk
Constant
structure

MTG JUN 19 1995 3

ZIPPERLISTS

Simplest case of xanalogical structure.

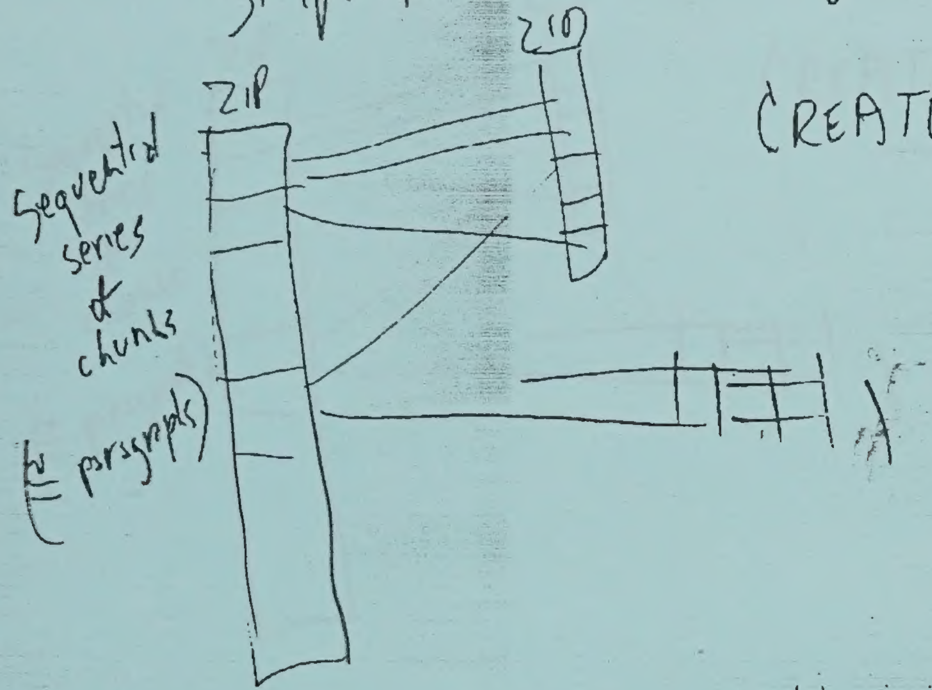

ZIP
ZIP
Sequential series of chunks
(≅ paragraphs)

CREATE & CHANGE ZIPS

MTG JUN 19 1995 4

ZIPPERLISTS

Simplest case of xanalogical structure.


ZIP
ZIP
Sequential series of chunks (≡ paragraphs)

CREATE & CHANGE ZIPS

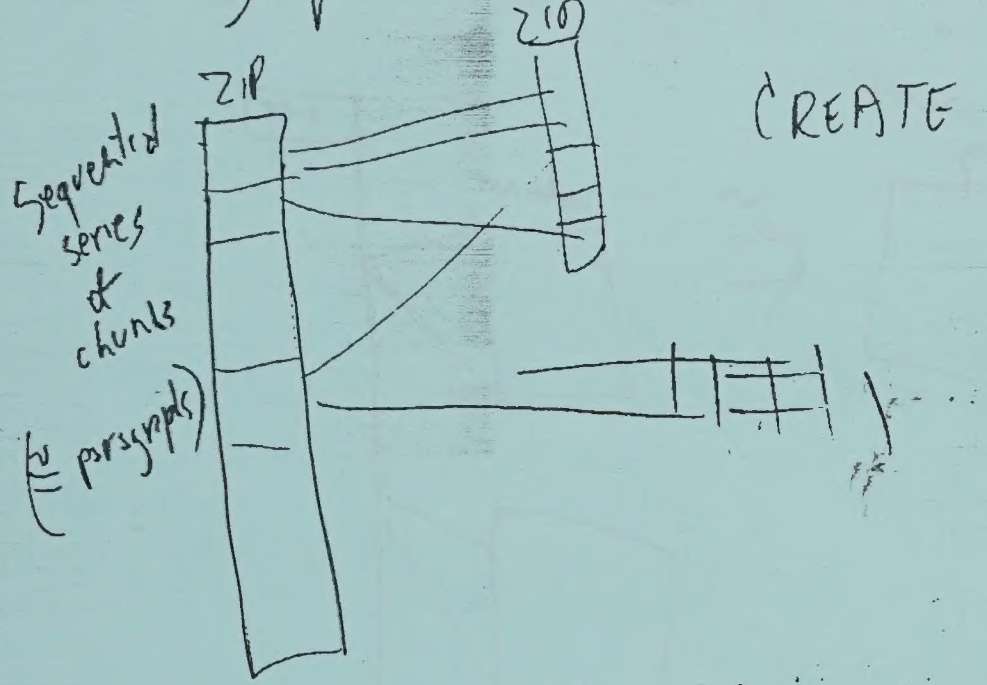
Purposes: MAINTAIN & UNDERSTAND CONNECTIONS
BUILD & USE COMPLEX STRUCTURE
OVERVIEWS OF COMPLEX STRUCTURES
BUILD
USE
OVERVIEWS } PARALLEL TEXT

Further purposes [added 95.6.20]
ALTERNATIVE STRUCTURES
ALTERNATIVE VERSIONS
CHECKLISTS
REARRANGED SUBSETS

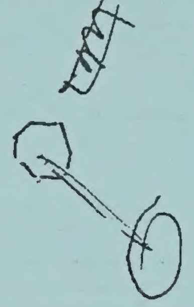
MVG JUN 19 1995 5

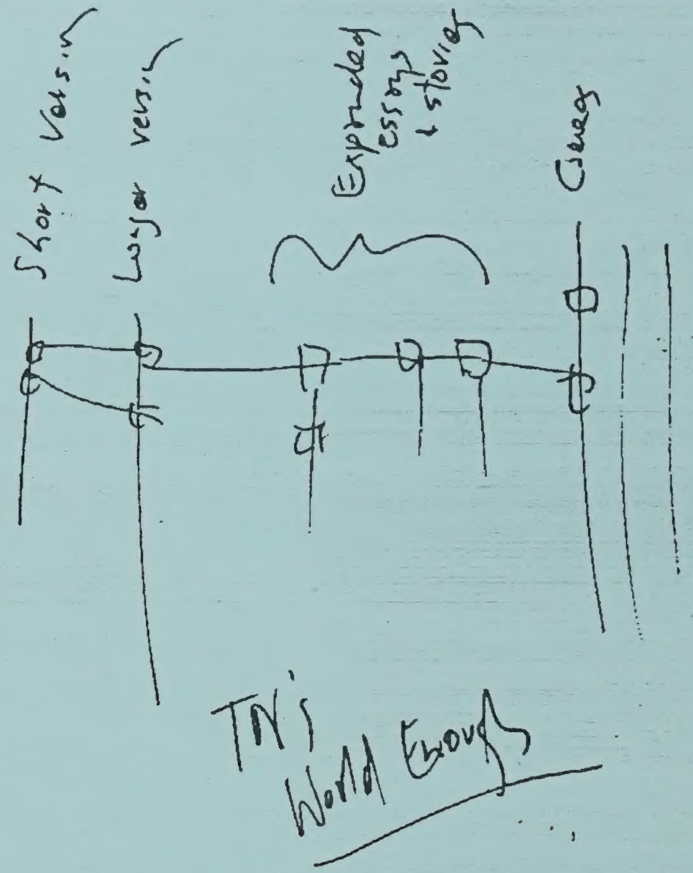
ZIPPERLISTS

Simplest case of xanalogical structure.


ZIP
ZIP
Sequenced series of chunks
(= paragraphs)

CREATE & CHANGE ZIPS

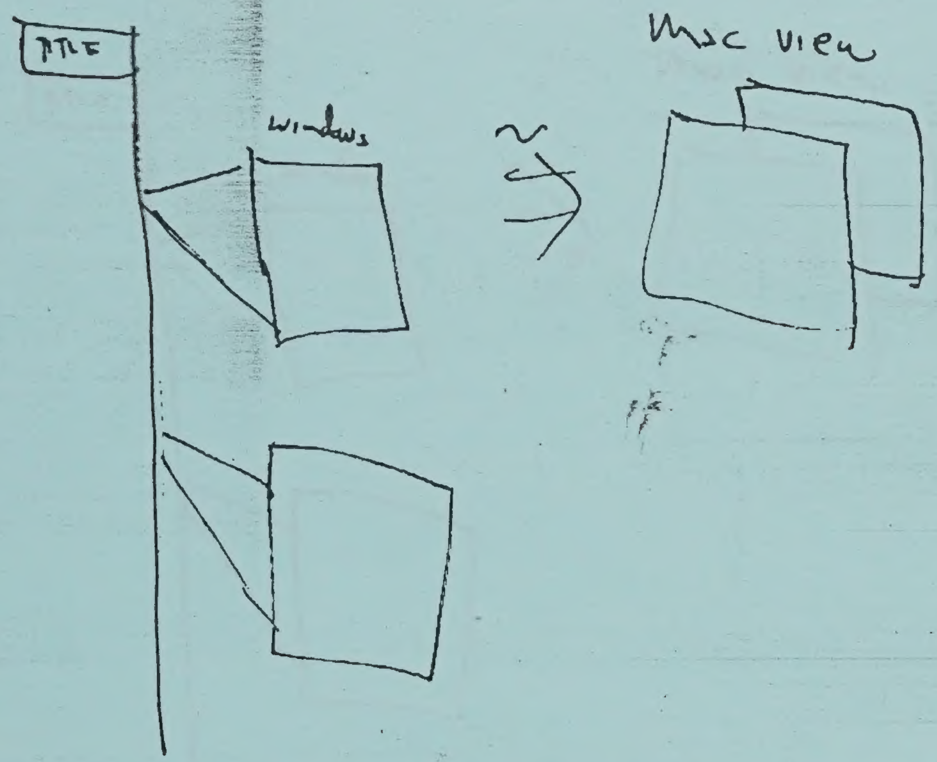



Short version
Longer version
Expanded essays & stories
Canes
TN's World Enough

MTG JUN 19 1995 6

"Tatsuno Otoshigo" Zip Interface

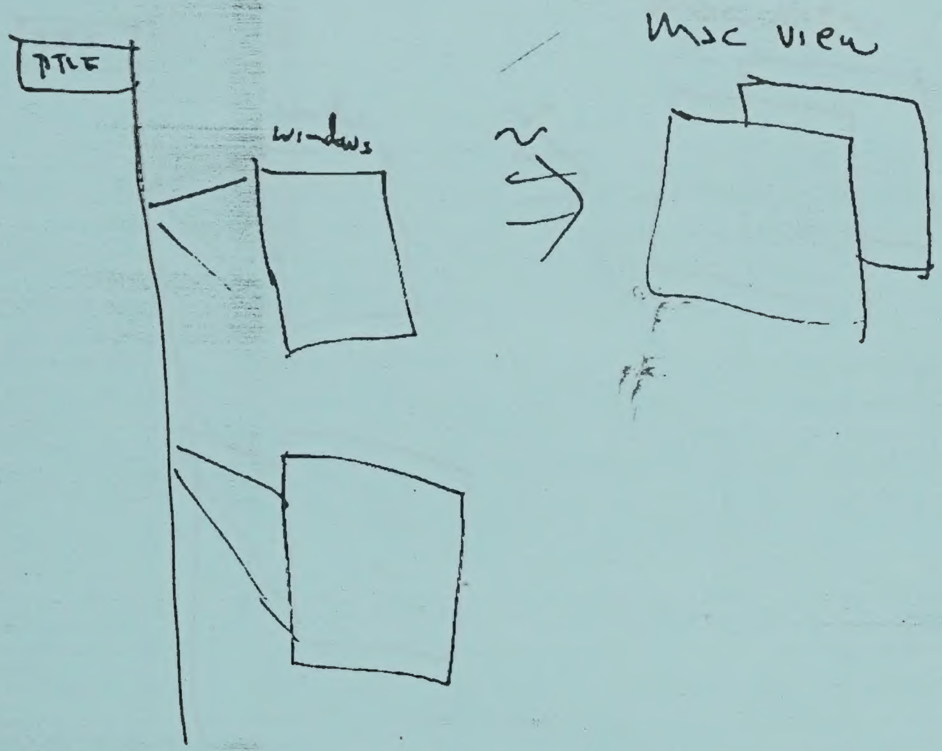
Basic Overview of a Document


TITLE
windows
Mac view

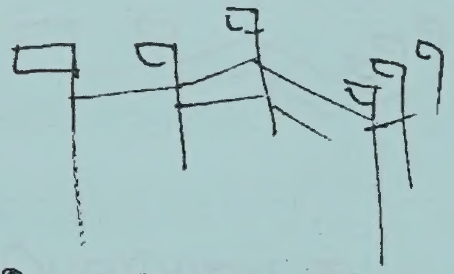
MAG JUN 19 1995 7

"Tatsuno Otoshigo" Zip Interface

Basic Overview of a Document


TITLE
windows
Mac view

Parallel View: Many Zips

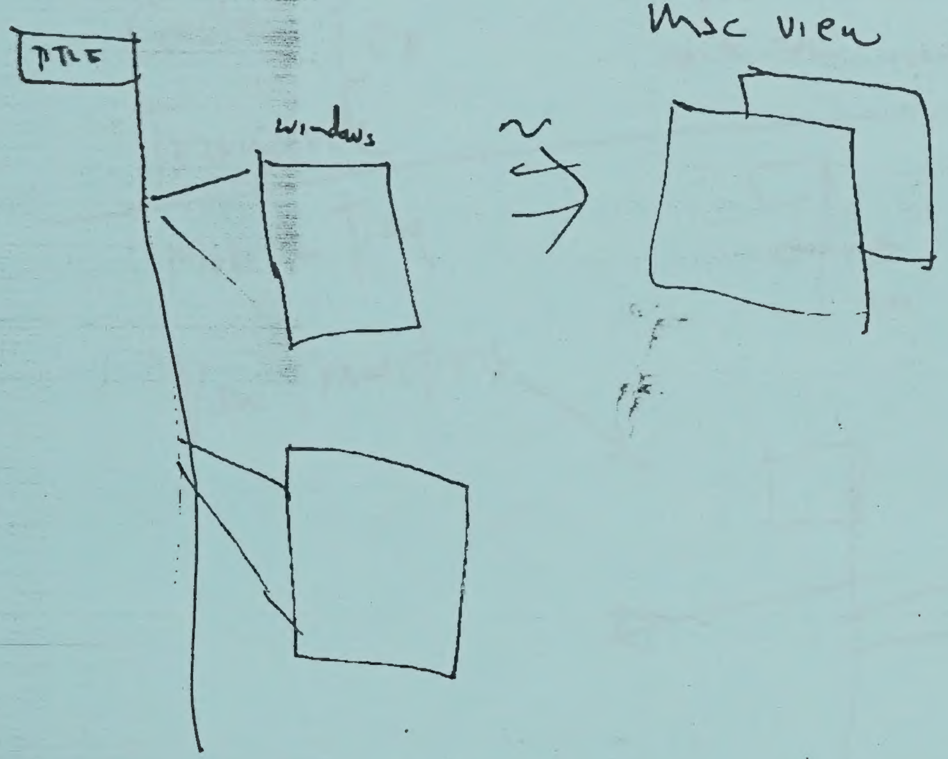


OVERVIEW OF
ONE PROJECT,
or
MANY PROJECTS

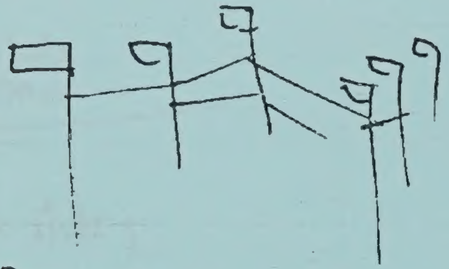
MTE JUN 19 1995 8

"Tatsuno Otoshigo" Zip Interface

Basic Overview of a Document

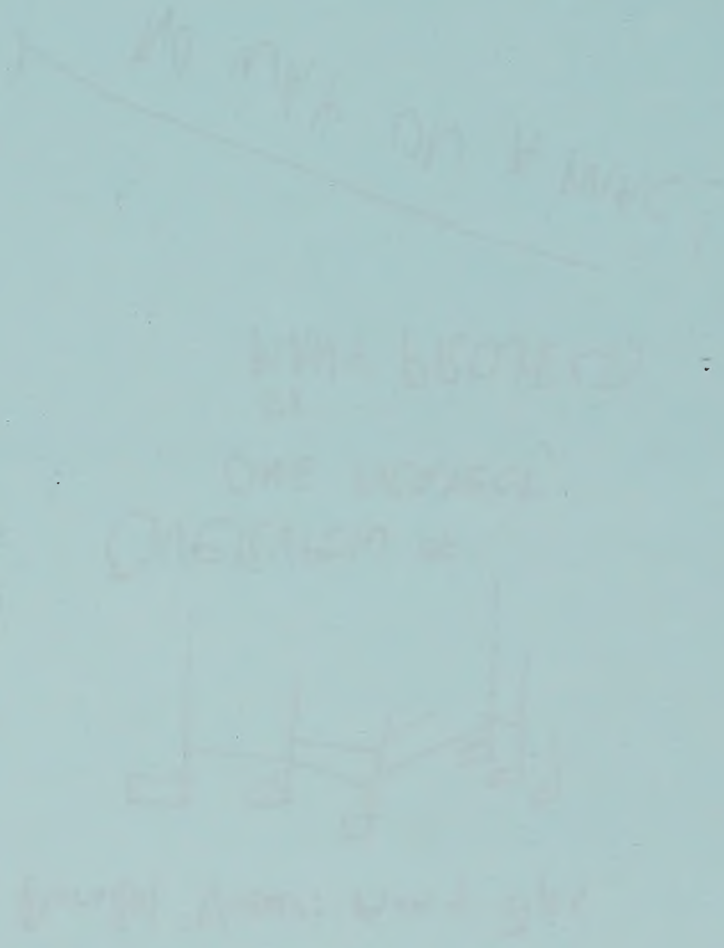

TITLE
windows
Mac view

Parallel View: Many Zips



OVERVIEW OF
ONE PROJECT,
or
MANY PROJECTS

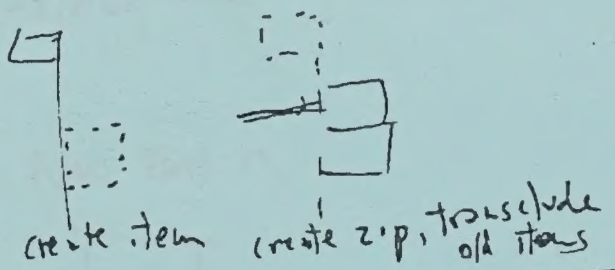
NO WAY ON A MAC!



MTG JUN 19 1995 9

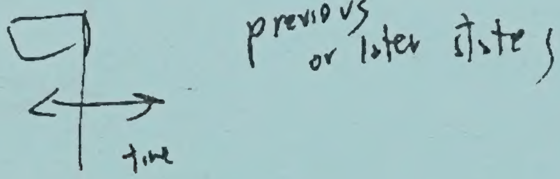
BASIC OPERATIONS

Create { Item
Zip

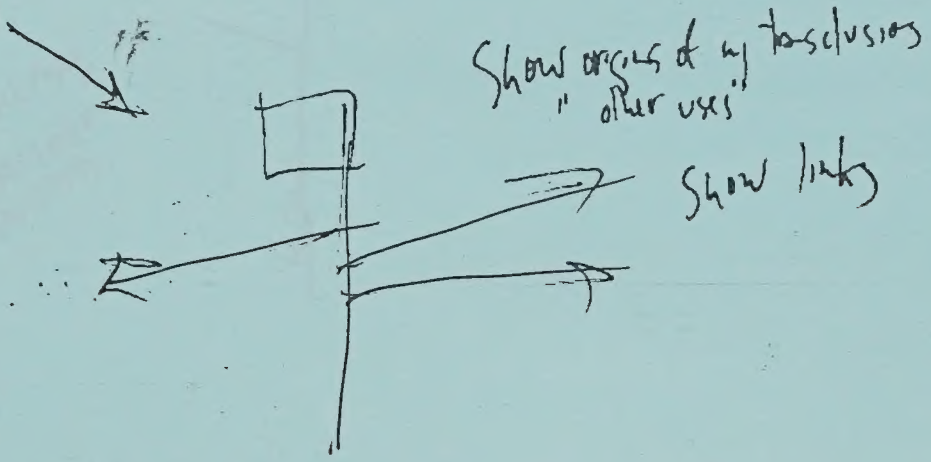

create item
create zip, transclude old items

Transclude

Move in Time

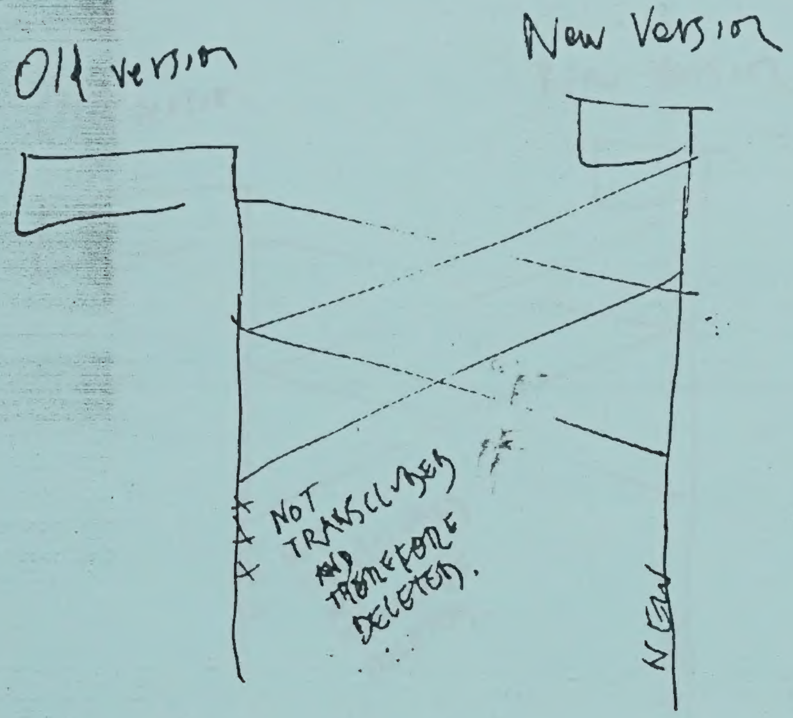

time
previous or later states

View Connections


Show origins of my transclusions
" other uses
Show links

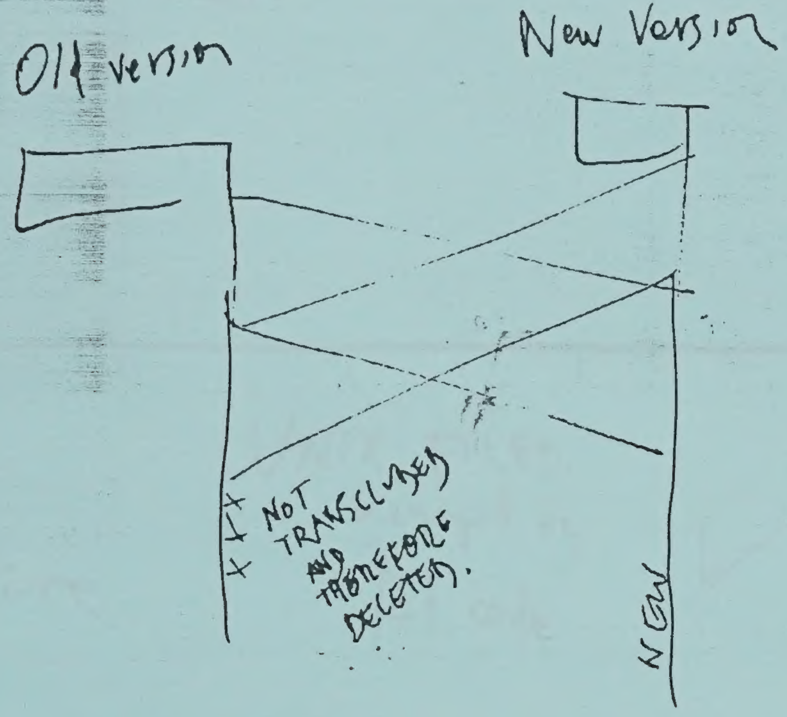
MTG JUN 19 1995 10

NO "WASTEBASKET." Instead —


Old version
New Version
X
X
X
NOT TRANSCLUDED AND THEREFORE DELETED.
NEW

MTG JUN 1 9 1995

NO "WASTEBASKET." Instead —


Old version
New Version
x x x NOT TRANSCLUDED AND THEREFORE DELETED.
NEW

You don't
"throw away" —
you simply don't
transclude it on
to the next version.

Two Levels of our Zip System:

Interface: in IP.

Data Structure UNIX FILES managed by Tcl code ✓

JUN 1 9 1995 /3

Two levels of our Zip System:

Interface : in IP. } (temporary interface:
IP + Emacs windows
for editing.)

Data
Structure
UNIX FILES
managed by
Tcl code ✓

MTG JUN 19 1995 14

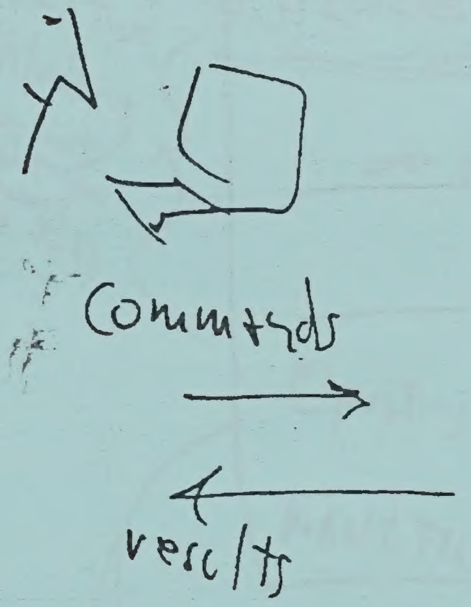
MTG — JN & Mr. Asai:

① UNIX as an environment.

② Tcl as a way of controlling Unix.

UNIX

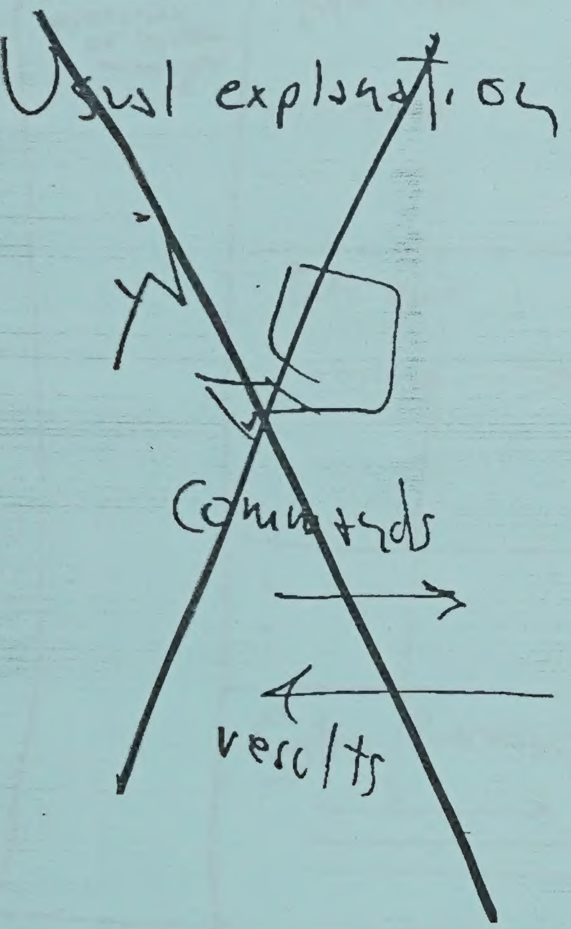
Usual explanation


Commands
results

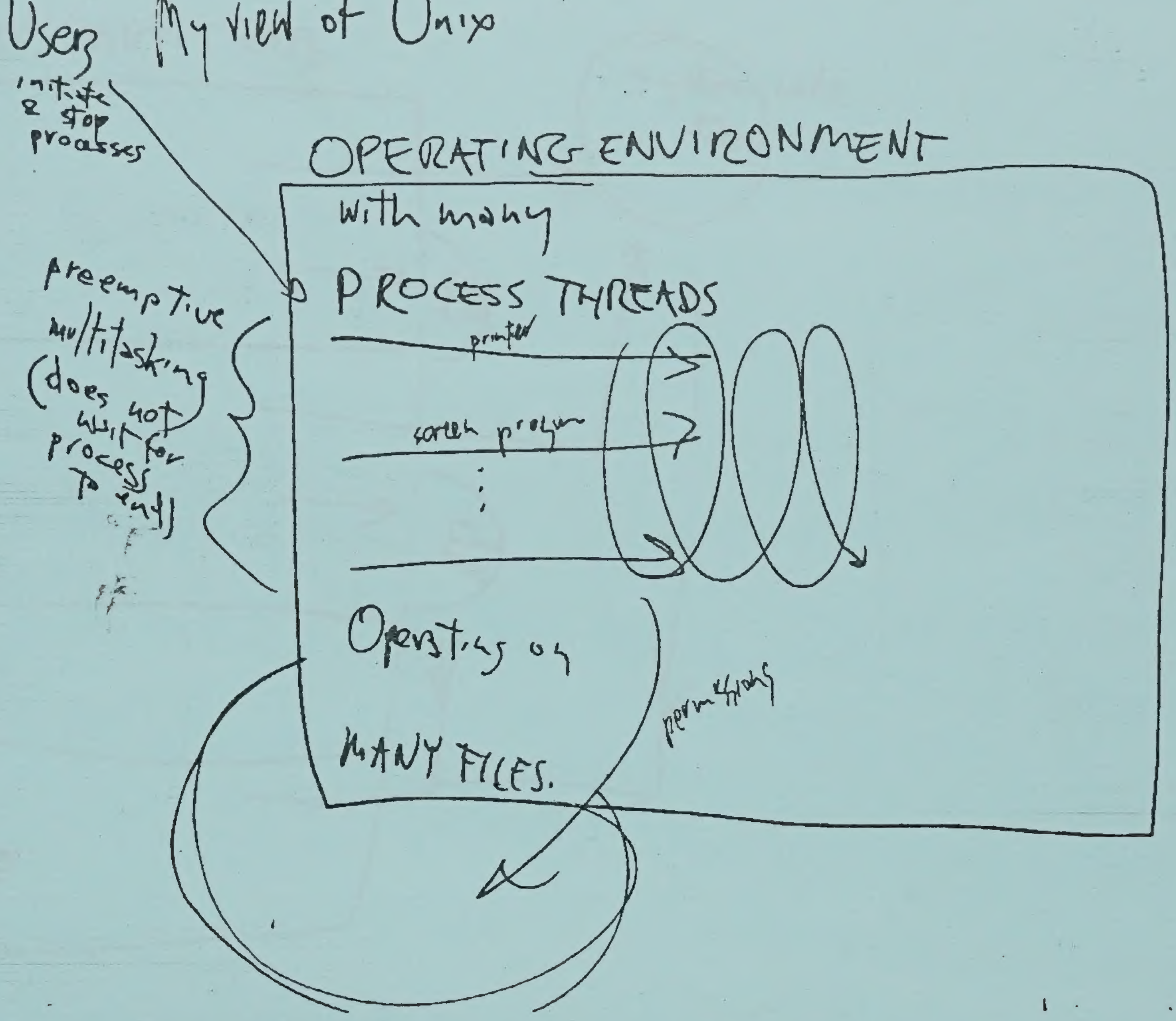
MTG JUN 19 1995 /6

UNIX

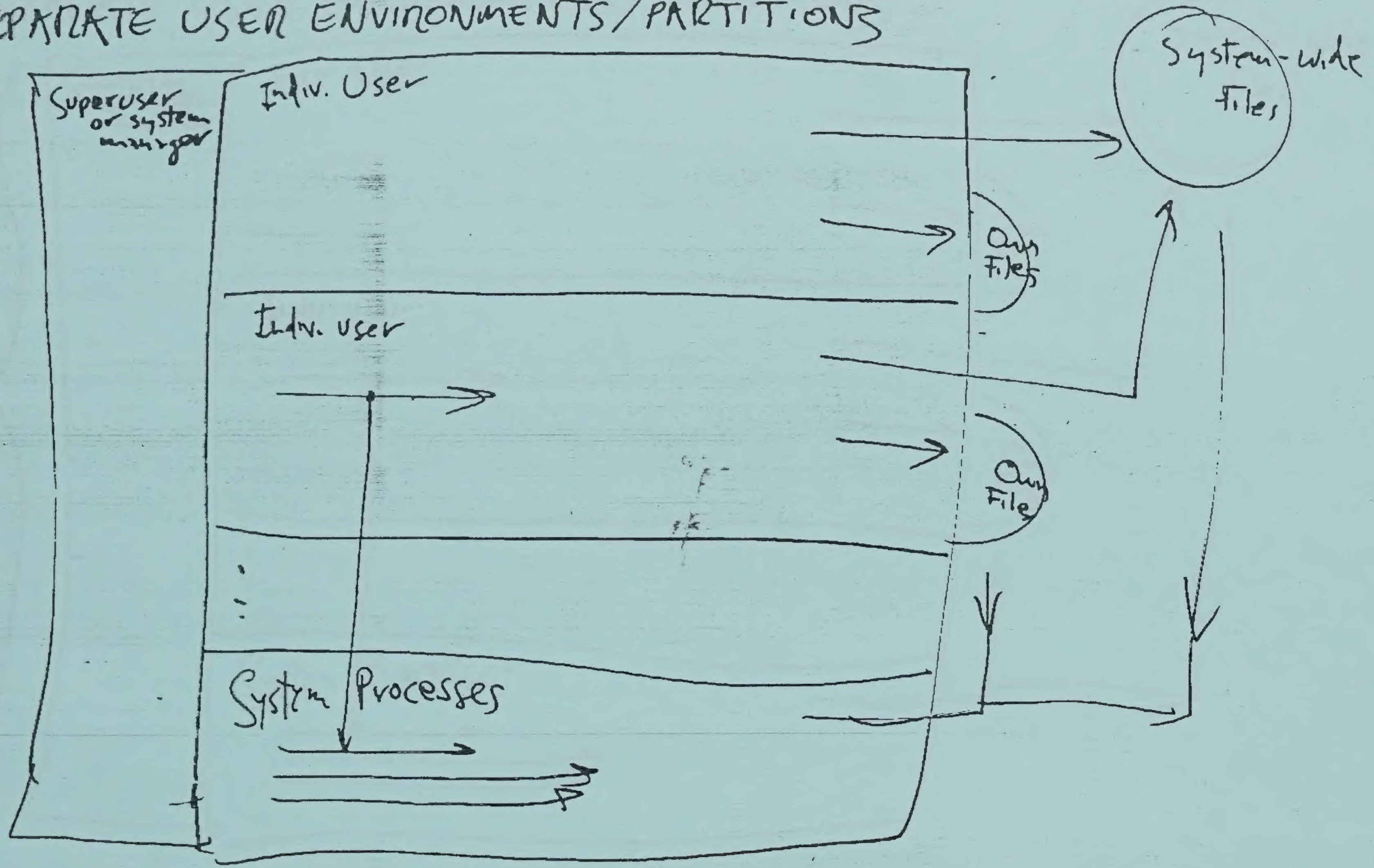
~~Usual explanation~~


~~commands~~
~~results~~

My view of Unix

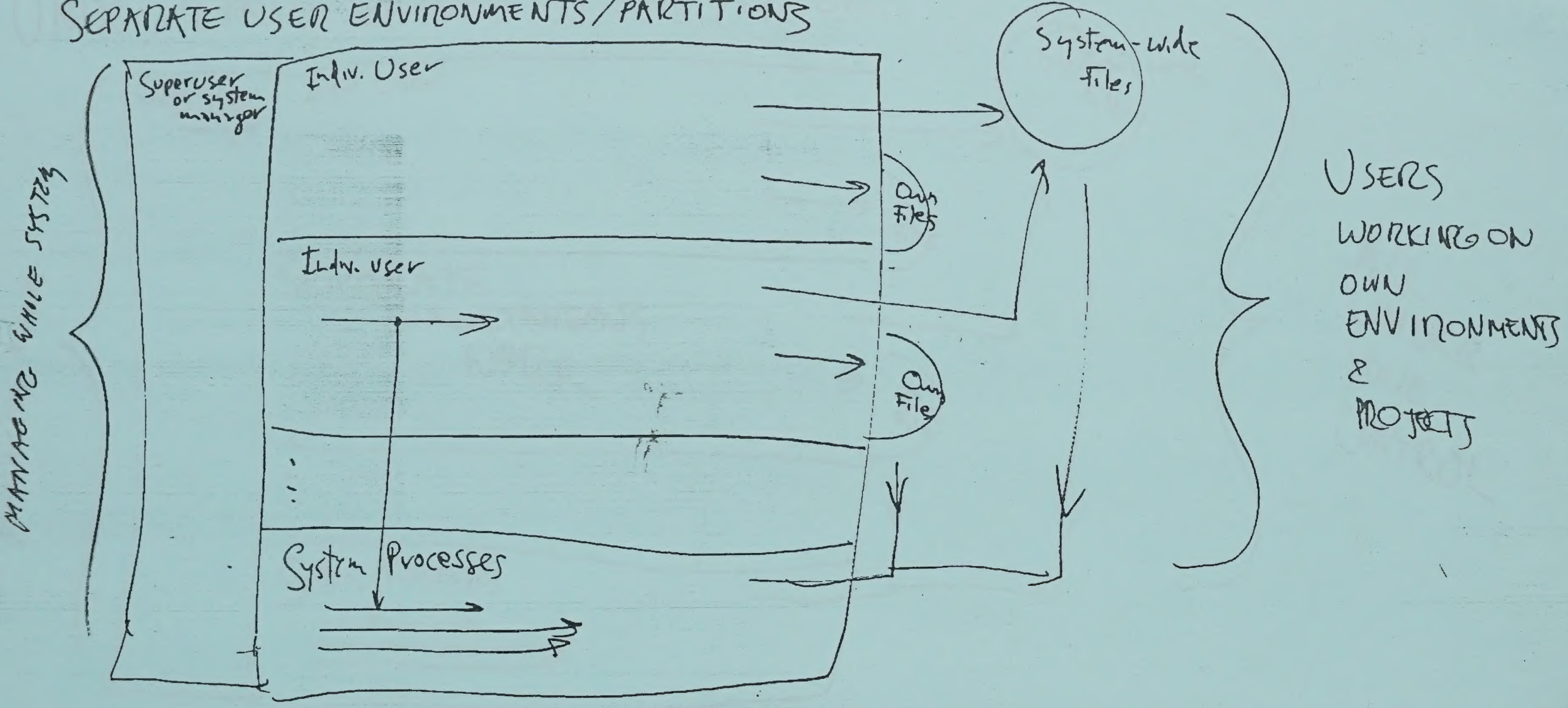

Users
initiate & stop processes
OPERATING ENVIRONMENT
with many
PROCESS THREADS
printer
screen program
preemptive multitasking (does not wait for process to end)
Operating on
MANY FILES.
permissions

SEPARATE USER ENVIRONMENTS/PARTITIONS

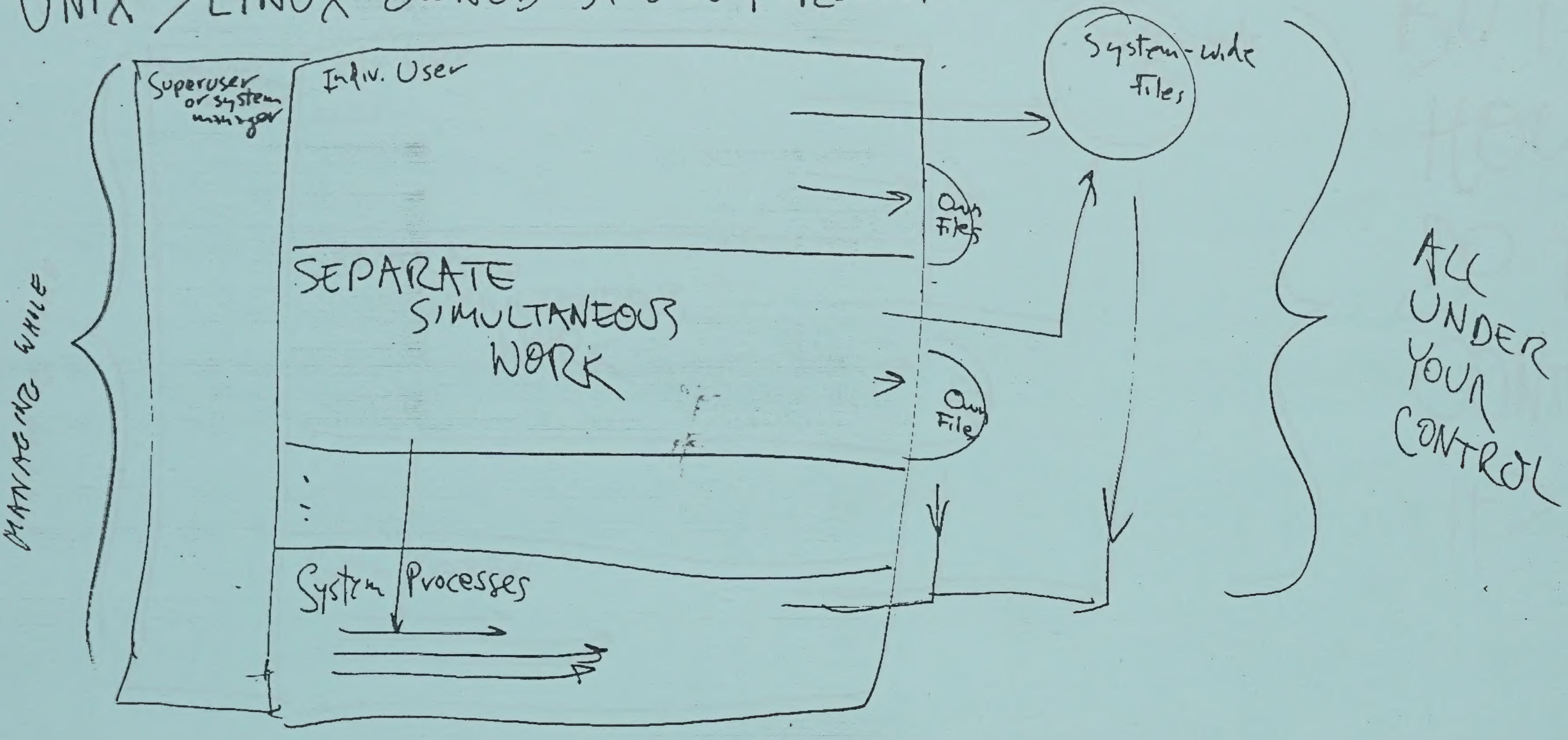

Superuser or system manager
Indiv. User
Own Files
Indiv. user
Own Files
System Processes
System-wide files

MTG JUN 1 9 1995 18

SEPARATE USER ENVIRONMENTS/PARTITIONS

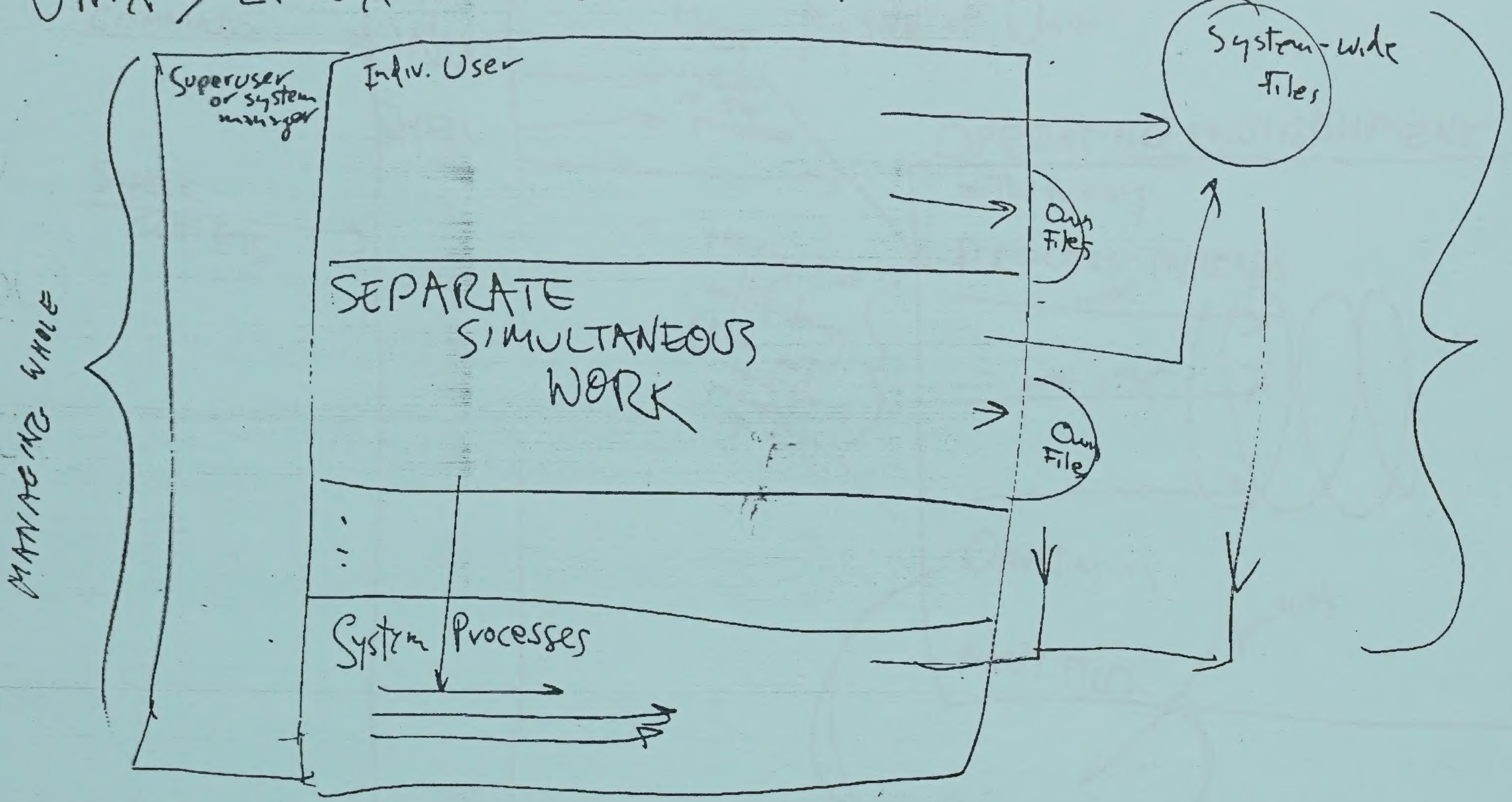

MANAGING WHOLE SYSTEM
Superuser or system manager
Indiv. User
Own Files
Indiv. user
Own File
System Processes
System-wide Files
USERS WORKING ON OWN ENVIRONMENTS & PROJECTS

UNIX / LINUX OWNED BY ONE PERSON.


MANAGING WHOLE
Superuser or system manager
Indiv. User
Own Files
SEPARATE SIMULTANEOUS WORK
Own File
System Processes
System-wide Files
ALL UNDER YOUR CONTROL

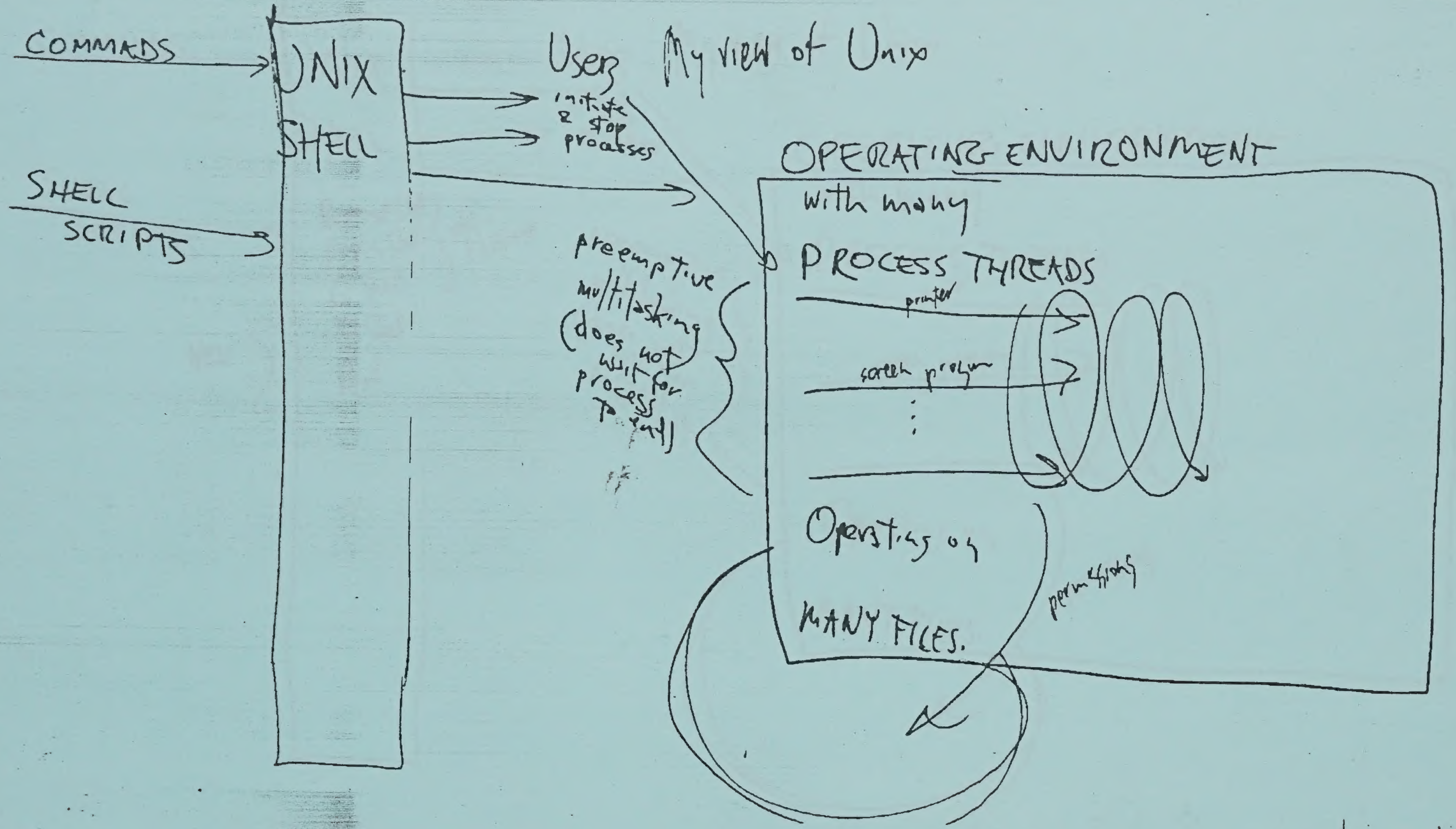
MTG JUN 19 1995 20

UNIX /LINUX OWNED BY ONE PERSON.

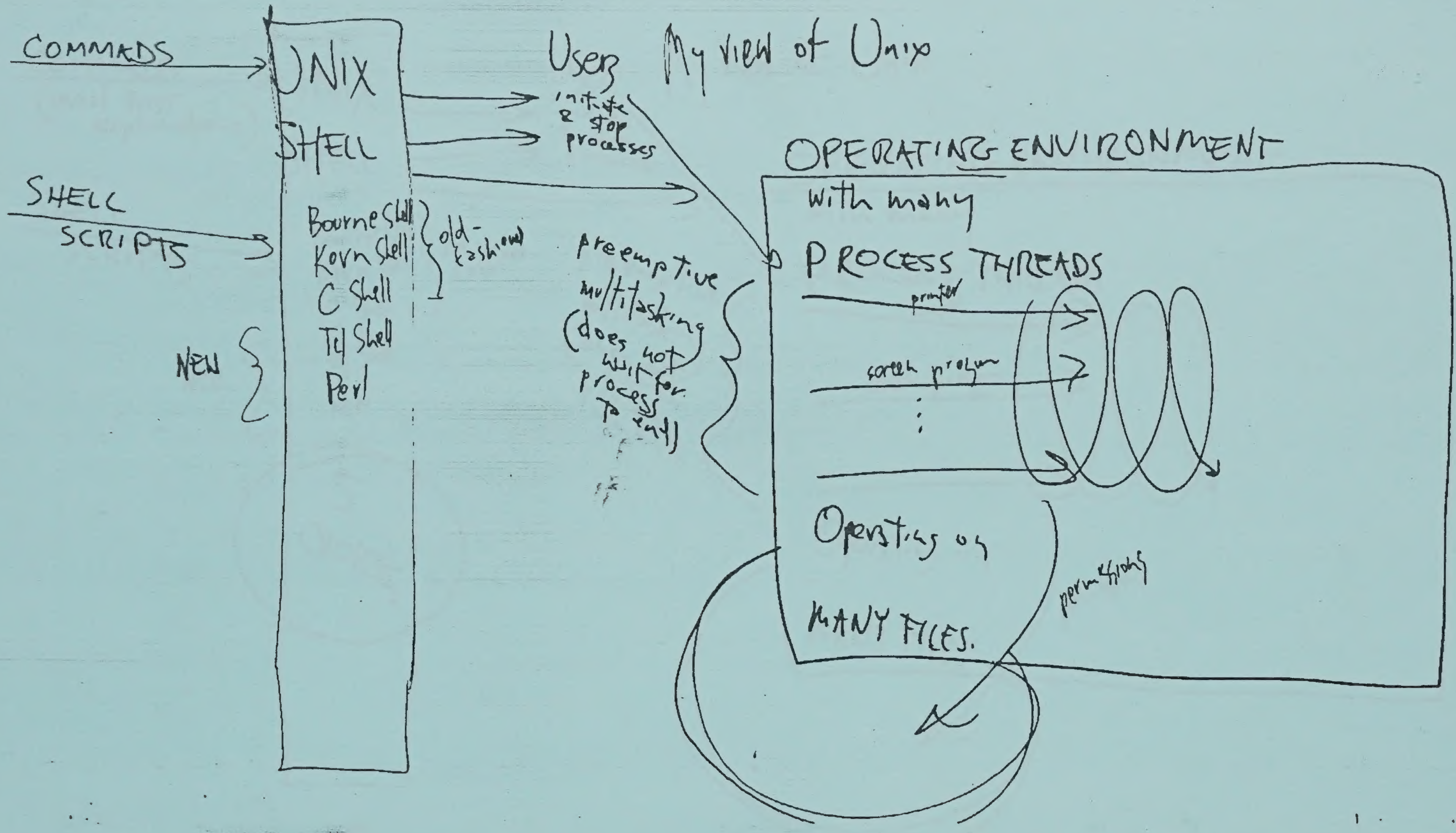

MANAGING WHOLE
Superuser or system manager
Indiv. User
Own Files
SEPARATE SIMULTANEOUS WORK
Own File
System Processes
System-wide Files

BUT HOW DO YOU CONTROL IT?

MTG JUN 19 1995 21

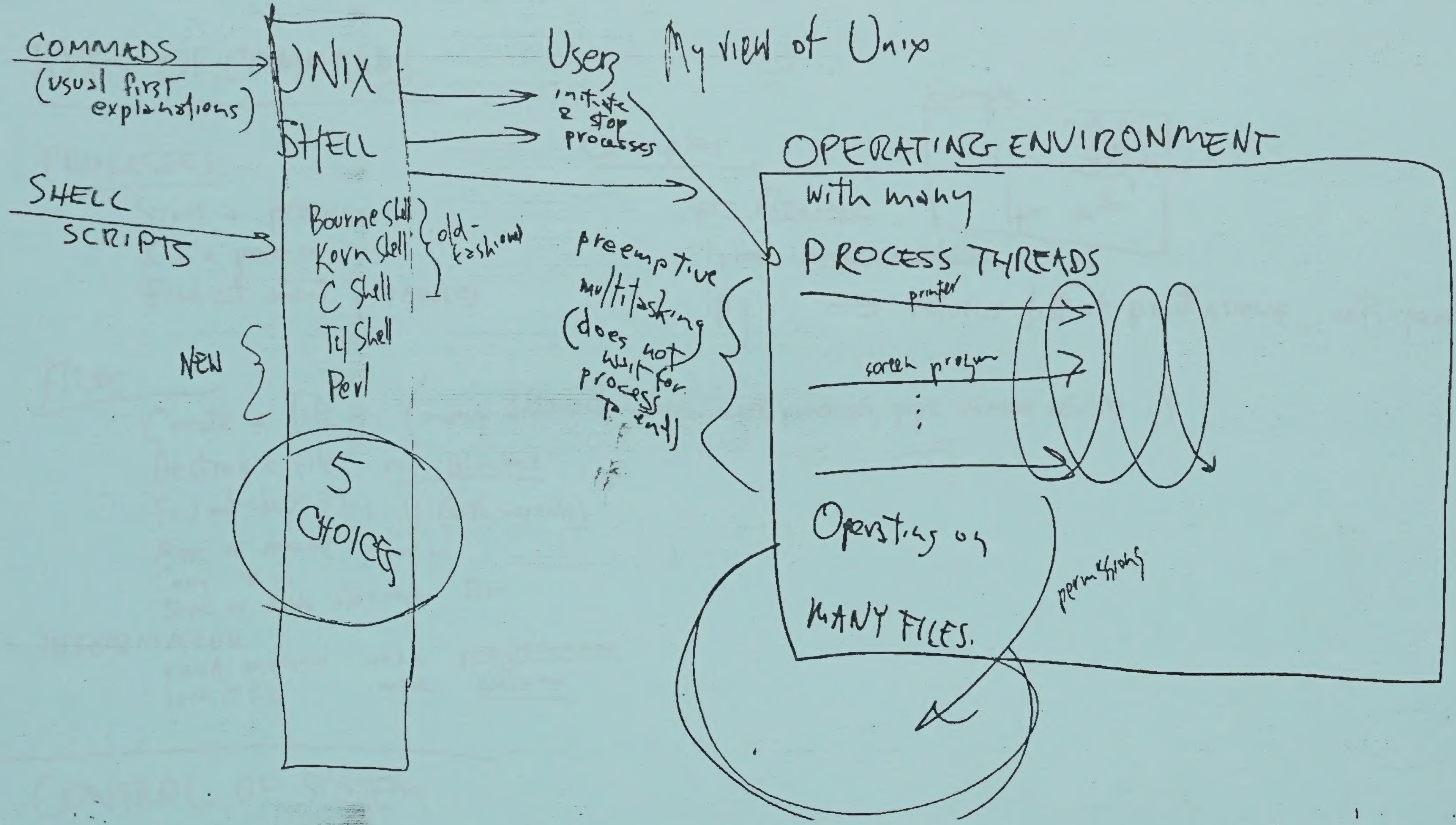

My view of Unix
COMMADS
SHELL SCRIPTS
UNIX
SHELL
Users
initiate & stop processes
preemptive multitasking (does not wait for process to yield)
OPERATING ENVIRONMENT
with many
PROCESS THREADS
printer
screen program
Operating on
MANY FILES.
permissions

MTG JUN 19 1995 22



My view of Unix
COMMADS
SHELL SCRIPTS
UNIX SHELL
Bourne Shell
Korn Shell
C Shell
Tcl Shell
Perl
old-fashioned
NEW
User
initiate & stop processes
preemptive multitasking (does not wait for process to end)
OPERATING ENVIRONMENT
with many
PROCESS THREADS
printer
screen program
Operating on
MANY FILES.
permissions

MTG JUN 19 1995 23


My view of Unix
COMMADS
(usual first explanations)
SHELL SCRIPTS
UNIX
SHELL
Bourne Shell
Korn Shell
C Shell
old-fashioned
Tcl Shell
Perl
NEW
5 CHOICES
Users
initiate & stop processes
preemptive multitasking (does not wait for process to end)
OPERATING ENVIRONMENT
with many
PROCESS THREADS
printer
screen program
Operating on
MANY FILES.
permissions

MTG JUN 19 1995 24

TYPES OF COMMANDS

PROCESSES

Examples

- Start a process — lpr filename
- Kill a process — lprm processnumber
- Find out about processes — lpq → returns list of print queue, with process numbers

Example

lpr m* — "all the files beginning with m"

FILES

- Create a file (many different ways: word processor, pipe various results ...)
- Destroy a file — rm filename
- Find out about files — ls (with variants)
- Move or rename — mv ...
- Copy — cp ...
- Tape or disk storage — tar

INFORMATION

- read manual — man programname
- look at file — more filename

⋮

CONTROL OF SYSTEM

CONTROL OF ACTION

- [illegible]
  [illegible]

INFORMATION

[illegible]

LIFE

[illegible] → ignore [illegible]

PROCESS?

USES OF CONTROL?

MTG JUN 19 1995

BASIC SYNTAX OF UNIX SHELLS : COMMANDS & OPS ARE FILENAMES /

$\overbrace{\text{command}}^{\text{name of file}}\ \underbrace{\square}_{\text{space}}\ \overbrace{\text{operand}}^{\text{name of file}}\ \square\ \overbrace{\text{operand}}^{\text{name of file}}\ \ldots$

OR

command -option1 -option2 ... operand operand ...

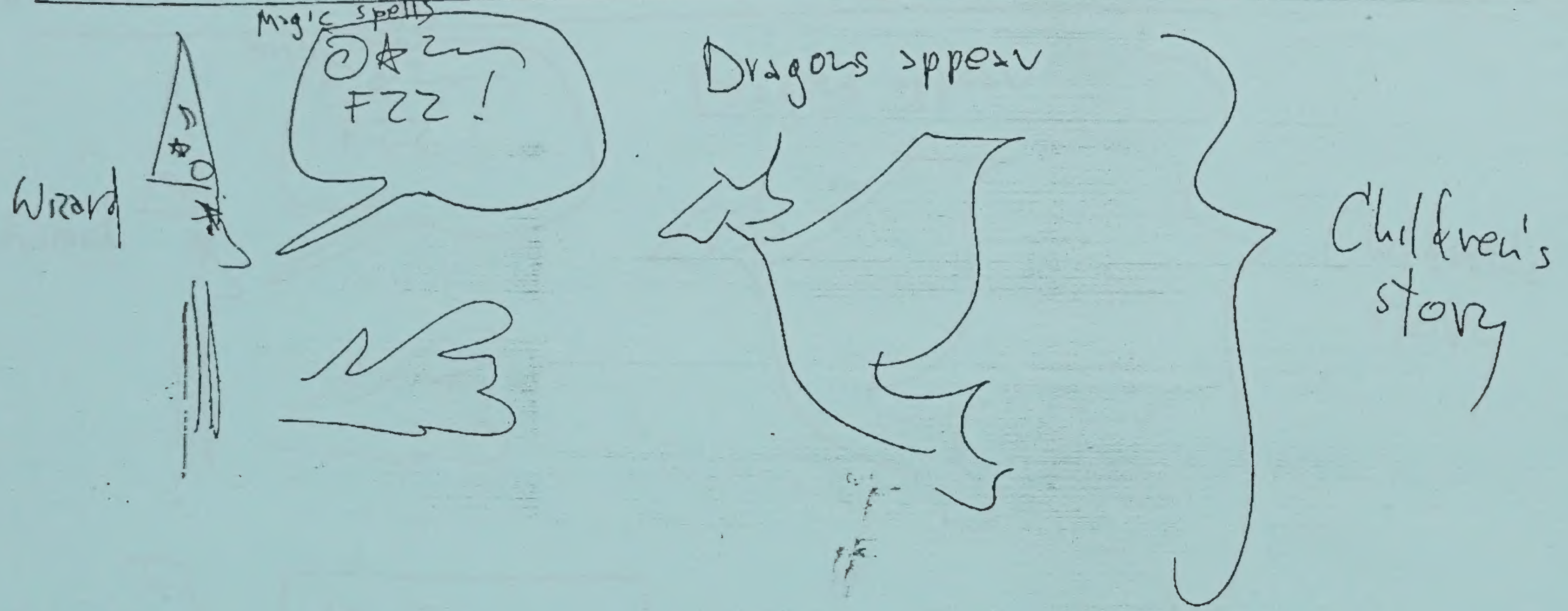
↑

— means "this is not a filename, it is an option."

MTG JUN 19 1995 26

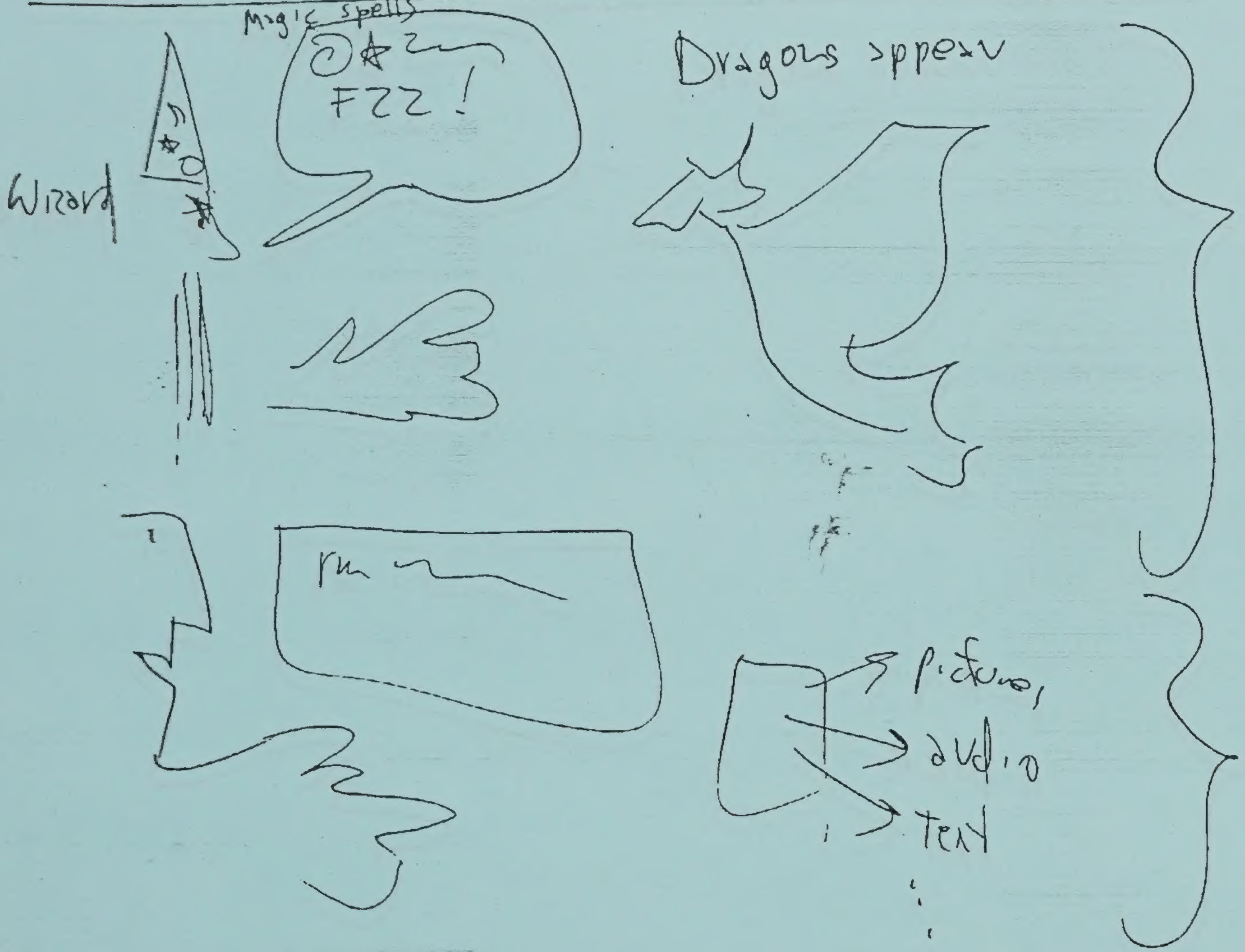
COMPUTER

WHAT IS An (PROGRAMMING) LANGUAGE?


Wizard
Magic spells
@☆
FZZ!
Dragons appear
Children's story

ATG JUN 1 9 1995 27

COMPUTER
WHAT IS A (PROGRAMMING) LANGUAGE? REAL SYSTEM
for MAGIC SPELLS


Magic spells
@★~
FZZ!
Wizard
Dragons appear
pictures,
audio
text
⋮

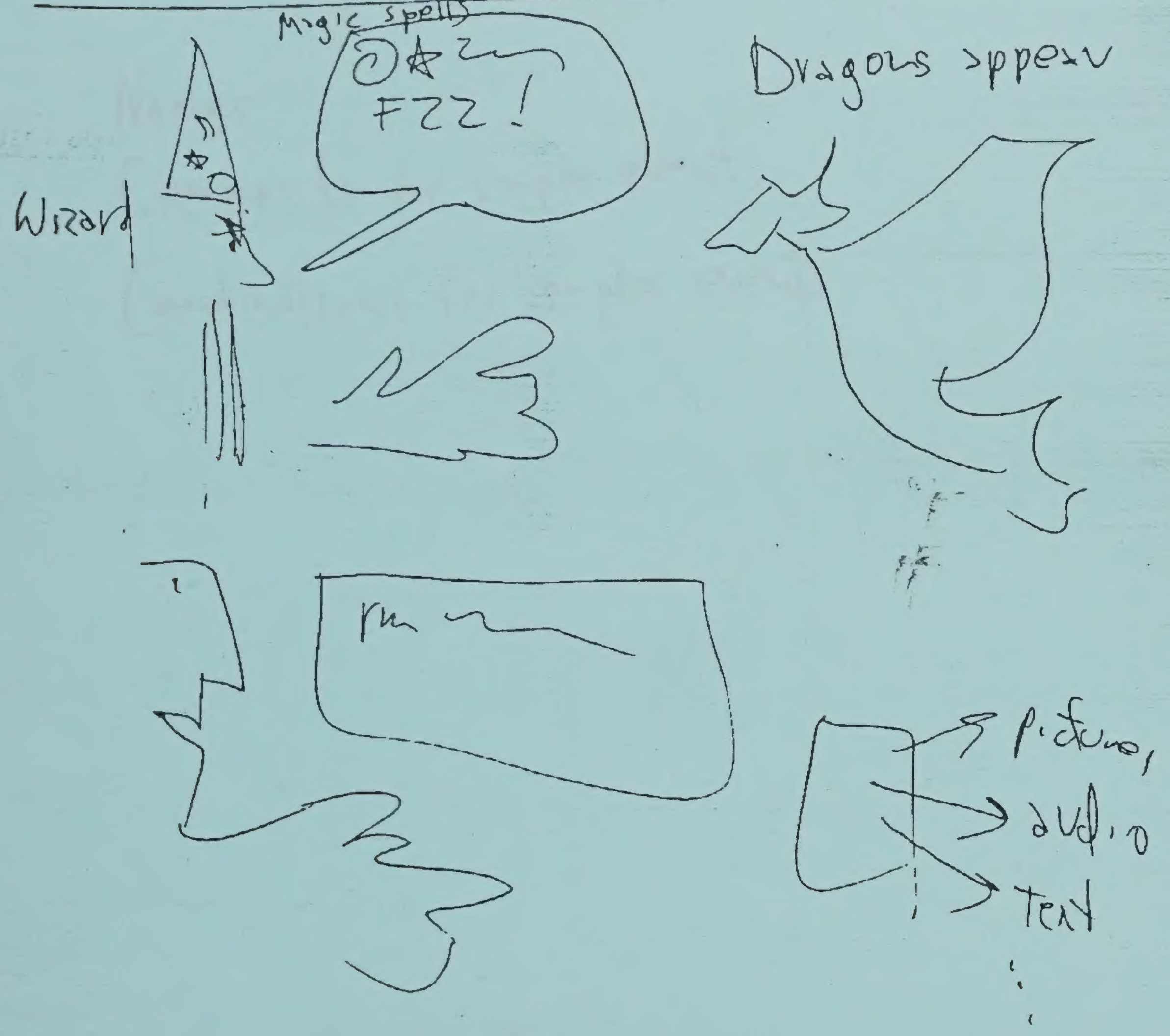
Children's story

Computer Reality

MTG JUN 19 1995 28

WHAT IS A COMPUTER (PROGRAMMING) LANGUAGE ?

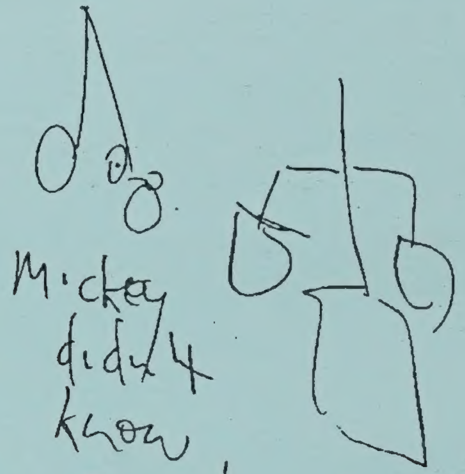
REAL SYSTEM
for MAGIC SPELLS


Wizard
Magic spells
@☆~
FZZ!
Dragons appear
rm ~
picture,
audio
text
:

Children's
story

Computer
Reality

Problem:
KNOWING ENOUGH



Mickey
didn't
know
enough

ATG JUN 19 1995

COMPUTER LANGUAGE

Names
Commands for simple events
Combinations for complex events

MTG JUN 19 1995 30

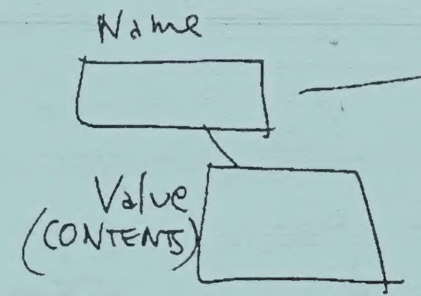
COMPUTER LANGUAGE

Names

Commands for simple events

Combinations for complex events — LOOP

RULES FOR COMBINING,
REPEATING,
TESTING



Tcl

Name: any string

(What Ted thinks is true)

Contents:

string — z...r any chars

list — series of items or values

array — " with names
Example:
PERSON(name)
PERSON(address)
PERSON(phone)

binary — 0011 0101 ...

Focus
Compute
CONTROL
CONDUCTOR INFLUENCE

MTF JUN 1 9 1995 32

COMPUTER LANGUAGE — Language for COMMANDING EVENTS
($\equiv$ Magic Spells)

Names
Commands for simple events
Combinations for complex events — LOOP : command to Repeat.
WHILE
FOREACH } control constructs
:

RULES FOR COMBINING,
REPEATING,
TESTING

[illegible]
KEEPING
BASIC FOR COMPUTING

LOOSE [illegible]
MAIZE } [illegible]-compliant

Compilation for coding [illegible] —— TOOL converted to [illegible]

Constructs for coding concept
years

(≡ [illegible])

COMPILED LANGUAGE — [illegible] to COMMUNITY CREDIT

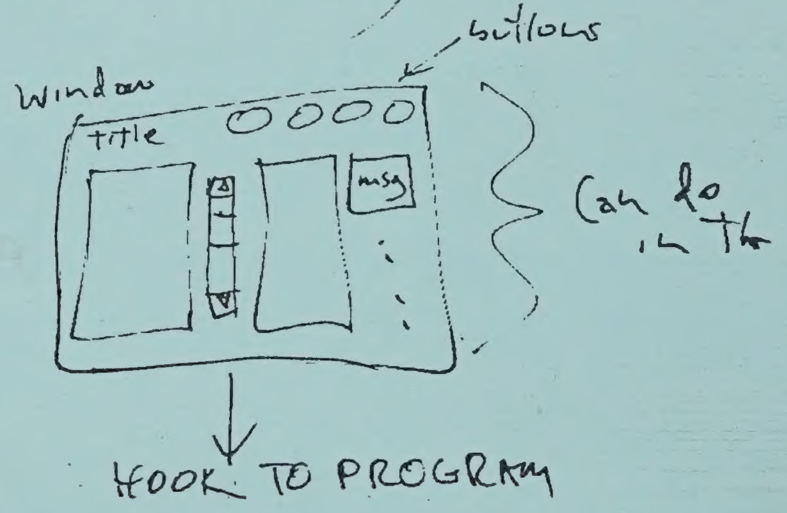
[illegible] 1 8 [illegible] 25

MTG JUN 19 1995 33

Tcl is a programming language

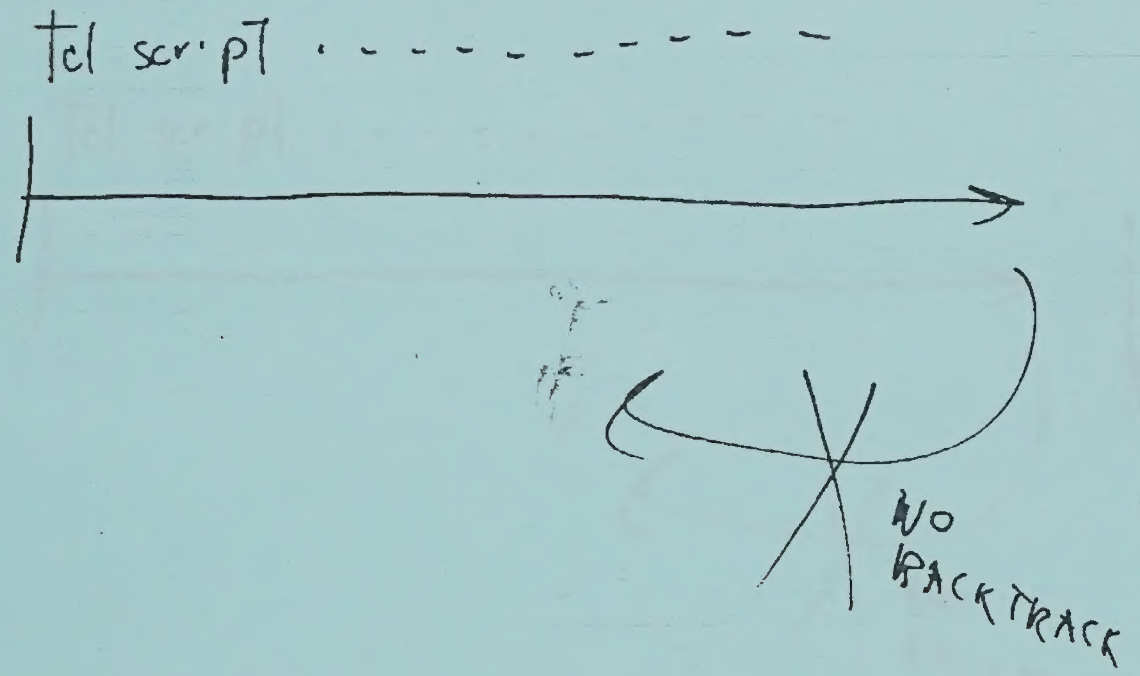
FOR CONTROLLING UNIX (shell language)
USING UNIX SYNTAX
GENERAL PURPOSE (other shell languages not so general)

Tk is a set of Tcl programs (library)
which BUILDS SCREEN FUNCTIONS.

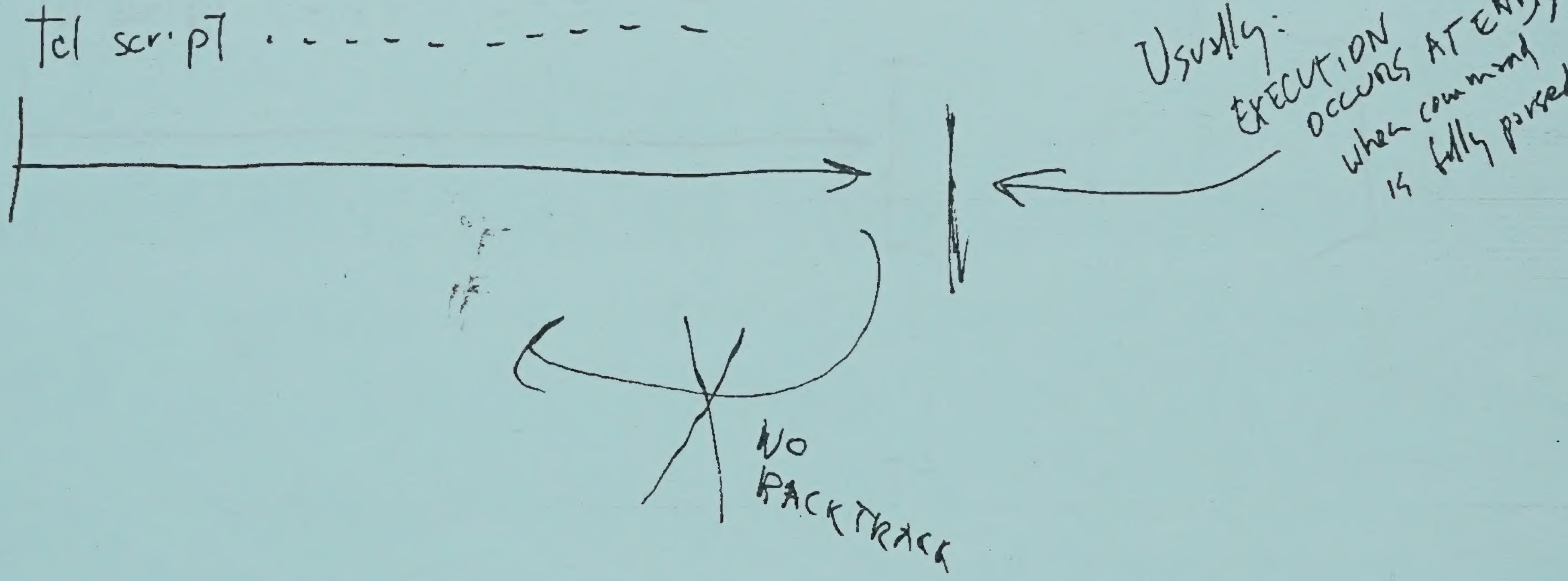

window
title
buttons
msg
Can do in Tk
HOOK TO PROGRAM

MTG JUN 19 1995

TCL PARSING → 1 pass.


tcl script
NO BACKTRACK

TCL PARSING → 1 pass.


Tcl script . . . .
NO BACKTRACK

Usually:
EXECUTION OCCURS AT END,
when command
is fully parsed.

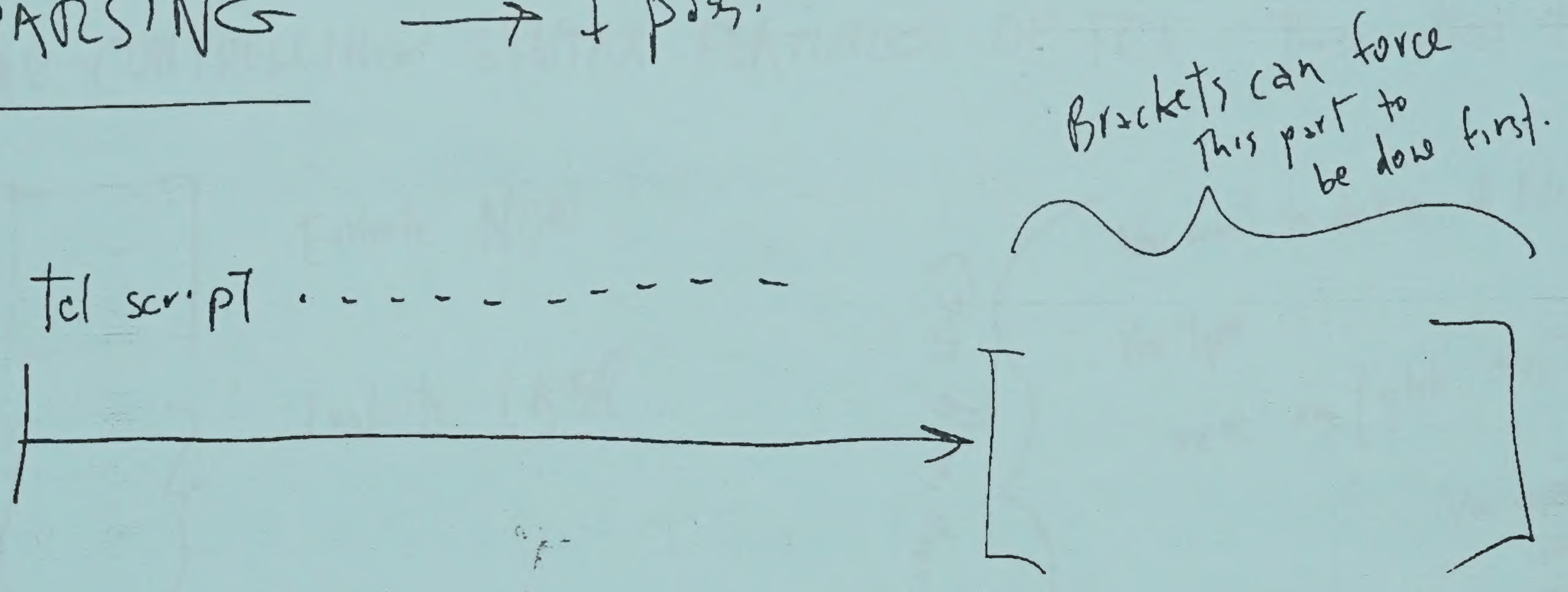
Brk Lever
No

ICC Crossings → 1 box

22

MRG JUN 19 1995 36

TCL PARSING → 1 pass.


Brackets can force
This part to
be done first.
tcl script

MTG JUN 1 9 1995 37

FOUR TIME-CONTROLLING SYNTAX FEATURES OF TCL. These affect the scanning sequence.

Brackets [...] Evaluate NOW

Braces { ... } Evaluate LATER

eval RE-evaluate

exec Do ALL THIS NOW.

Example (p. 35-6)

You want to delete all files ending in .0

You type:

```
exec rm [glob *.0]
```

You expect this to become

```
rm a.0
rm b.0
:
```

what it returns:

⇒ a.0 b.0 c.0 nonexistent

it thinks this is named one file because

(1st THIS [illegible] a.0 b.0 c.0

CORRECT COMMAND:

```
eval exec rm [glob *,0]
```

BRACES

① PROTECT CONTENTS (special characters not evaluated)

☆ ② POSTPONE EXECUTION — execution will occur later or not at all.

MTG JUN 19 1995 59

PARTICULAR COMMANDS

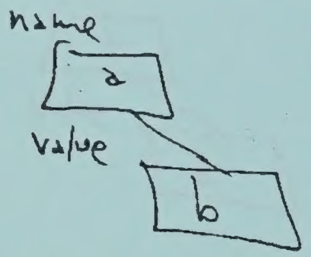
in Tcl —

MITF JUN 19 1995

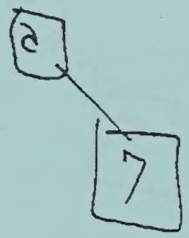
"set" command

2 arguments

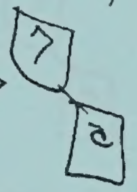
set a b ⇒


name
a
value
b

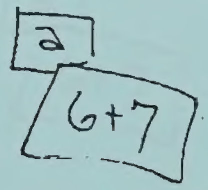
set a 7 ⇒



set 7 a ⇒



set a 6+7 ⇒

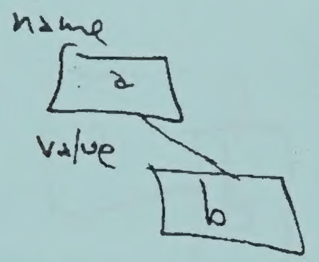


MG JUN 19 1995 4/1

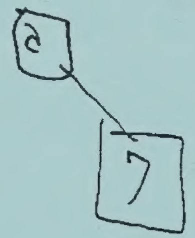
"set" command

2 arguments

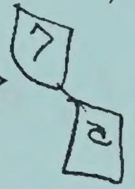
set a b ⇒


name
a
value
b

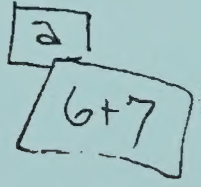
set a 7 ⇒



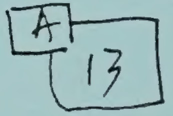
set 7 a ⇒



set a 6+7 ⇒



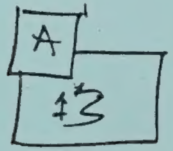
set a [6+7] ⇒ translates to



[see p.

set a expr 6+7

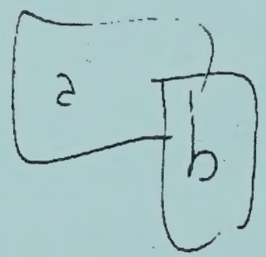
⇒



MTG JUN 19 1995 42

"set" command

2 arguments

set a b ⇒ 

1 argument

set a ⇒ (contents of a)

MTG JUN 19 1995 43

the "expr" command for mathematical evaluations.

75*2 is just a string.

expr 75*2 ⇒ 150

expr (~)

this can be a long series

MR JUN 1 9 1995 44

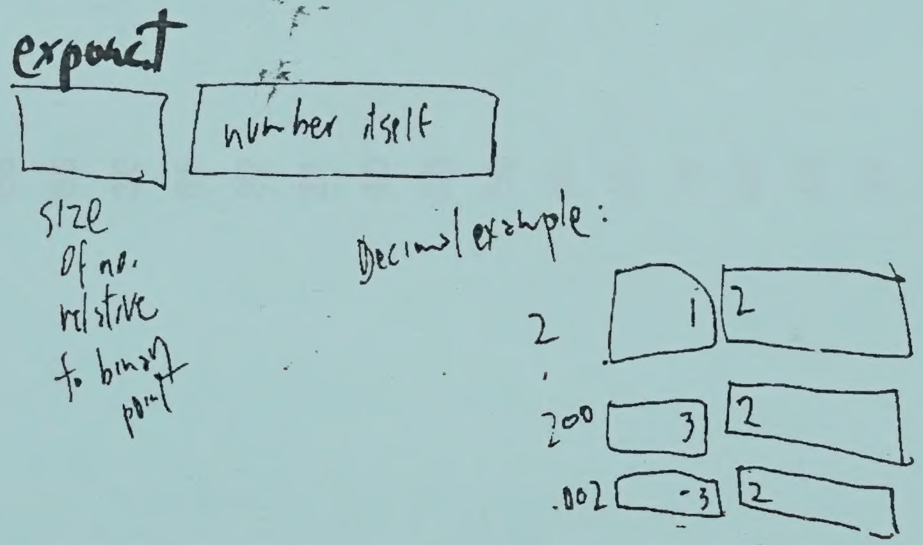
FORMS OF NUMBER STORAGE

string "7612"
four ASCII characters

integer → [converted to a binary string] DON'T DIVIDE WELL.
Good for counting money
Bad for estimates "scientific"/approximate numbers

octal 0~
hex 0x~
number base for input

"real" (float)



exponent
number itself
size of no. relative to binary point
Decimal example:
2
1
2
200
3
2
.002
-3
2

Meeting Date	Subject(s)	Page.Total
11/1/94		7
11/1/94		7
11/2/94		31
11/2/94		31
11/4/94		31
11/4/94		31
11/7/94		28
11/7/94		28
11/8/94		65
11/8/94		30
11/8/94		65
11/9/94		22
11/10/94		21
11/12/94		40
11/17/94		28
11/19/94		50
11/23/94		52
11/25/94		22
11/28/94		16
11/30/94		46
12/1/94		42
12/3/94		43
12/7/94		30
12/9/94		17
12/10/94		14
2/6/95		8
2/8/95		17
3/7/95		39
3/10/95		32
3/11/95		36
4/15/95		18
4/18/95		4
4/26/95		14
4/28/95		14
4/29/95		22

Meeting Date	Subject(s)	Page.Total
5/9/95		28
5/17/95		4

MTG-95.7.10

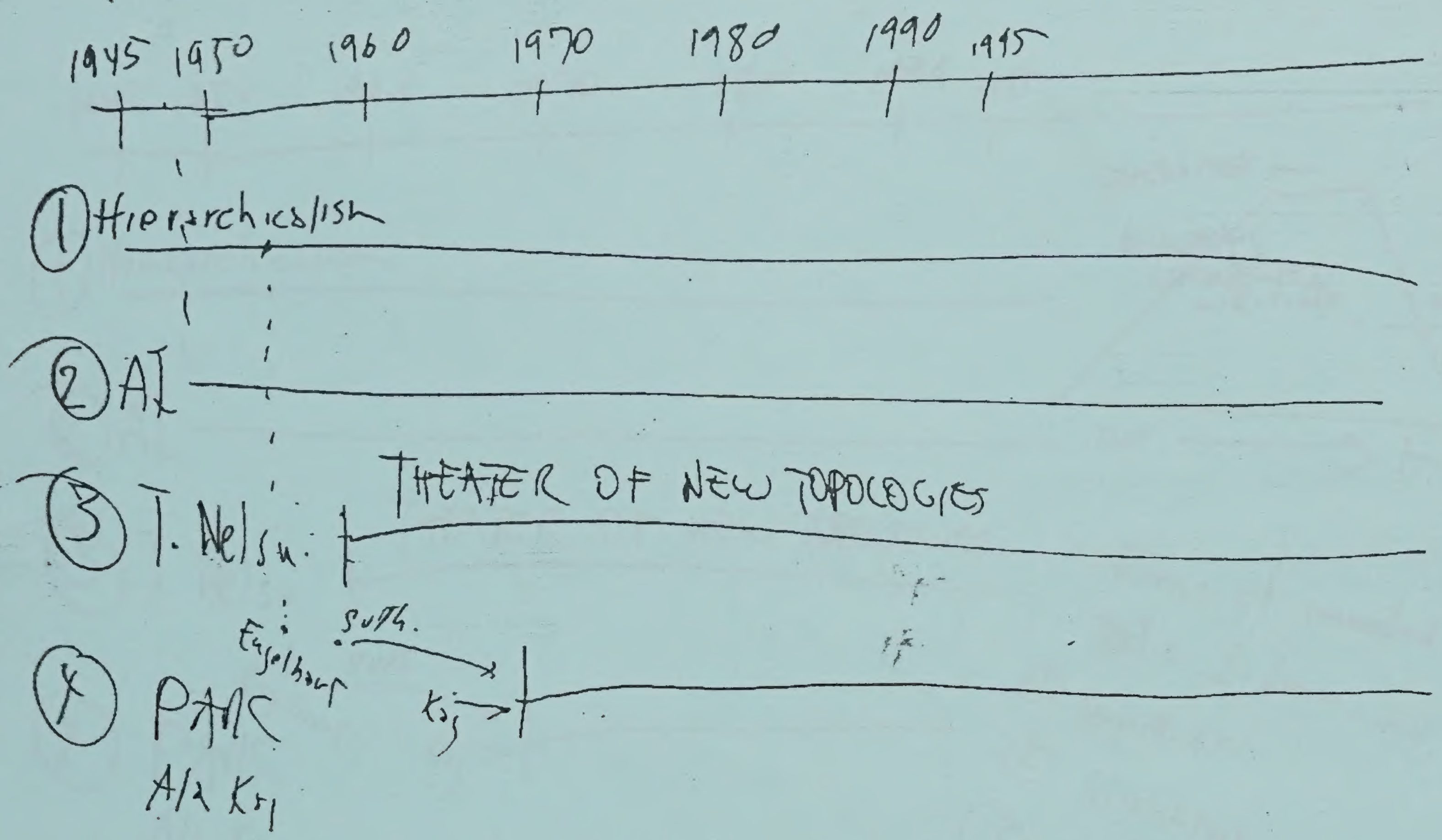
From Fuji Xerox:
Masao Kato,
Kazuhiko Hasegawa,
Naotake Watanabe,
K. Nakajima.
Also TN, later YT.

(Not on tape.)

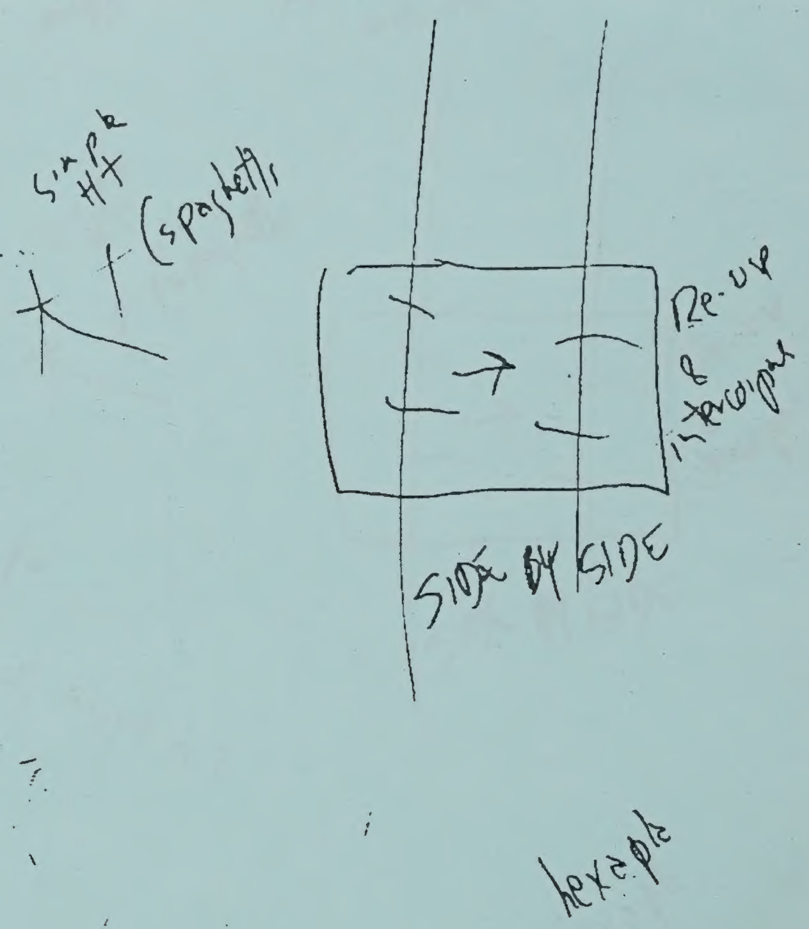
BRIEF DISCUSSION OF:

Transmedia,
'Theater of new topologies.'

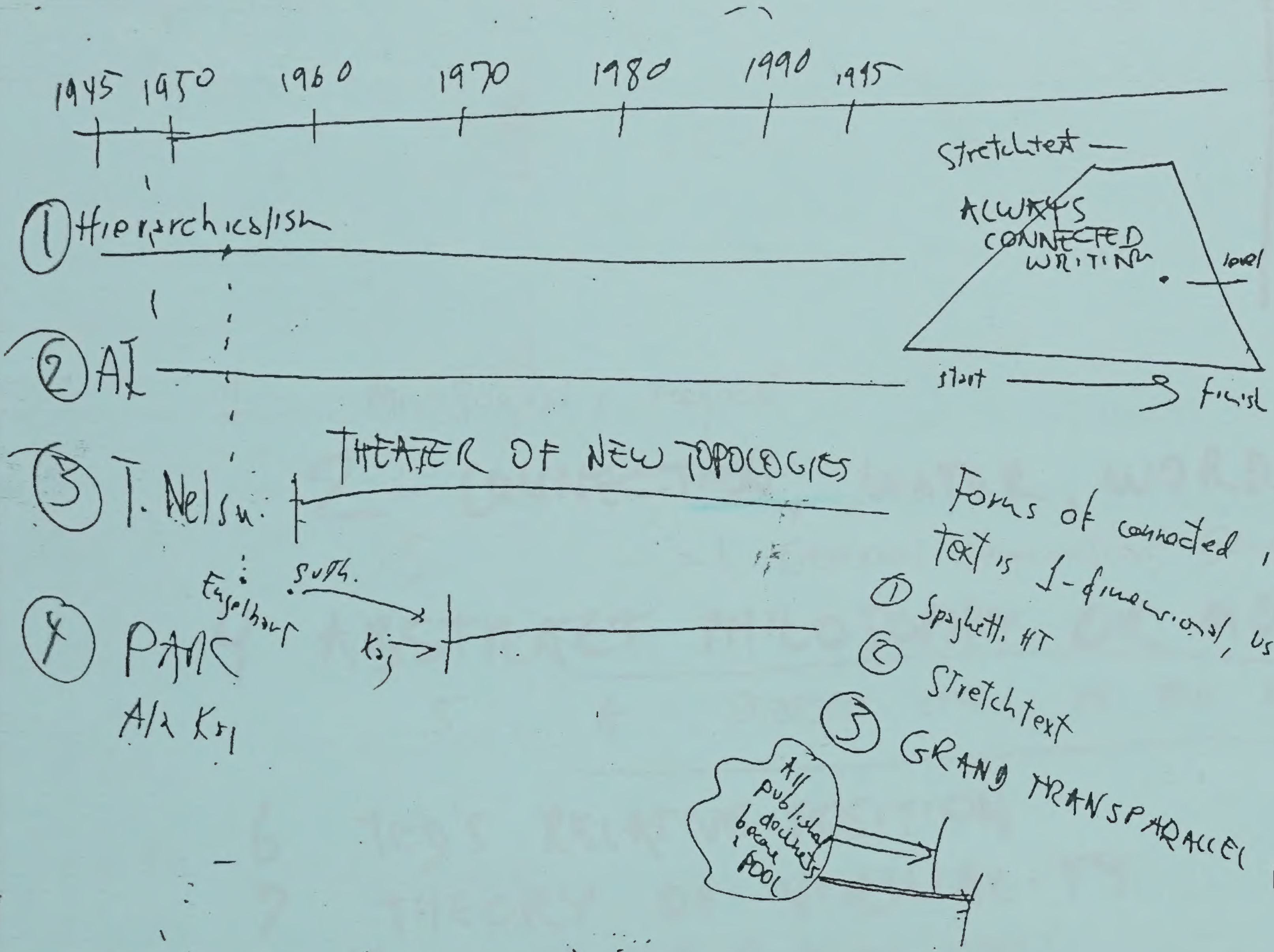
MTG 95.7.10 1


1945
1950
1960
1970
1980
1990
1995
① Hierarchicalish
② AI
③ T. Nelson
THEATER OF NEW TOPOLOGIES
④ PARC
Alan Kay
Engelbart
Suth.
Kay

1960 model: TRANSPARALLEL
side by side
with shared material


simple HT
(spaghetti)
Re-use
&
intercompare
SIDE BY SIDE
hexaple

95.7.10 2


1945
1950
1960
1970
1980
1990
1995
① Hierarchicalish
② AI
③ T. Nelson
THEATER OF NEW TOPOLOGIES
④ PARC
Alan Kay
Engelbart
synth.
Kay
Stretchtext
ALWAYS CONNECTED WRITING
level
start
finish
All published documents become a POOL

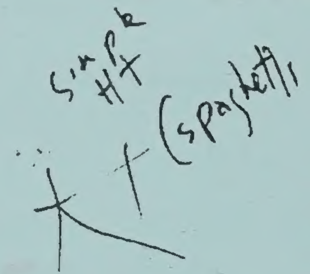
Forms of connected info

Text is 1-dimensional, usually mapped to ?

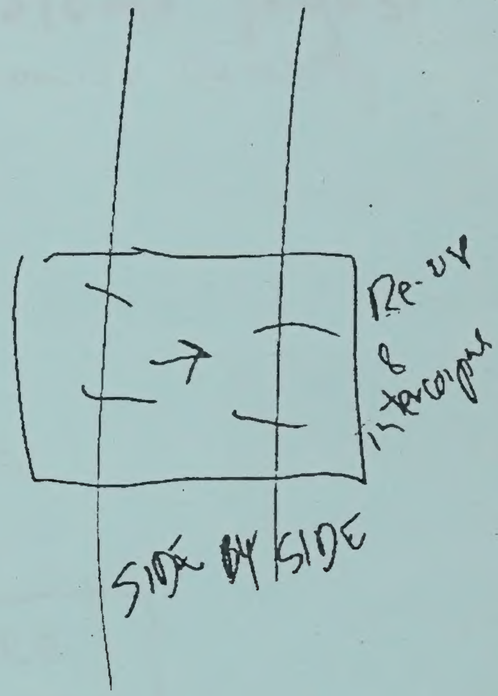
① Spaghetti HT

② Stretchtext

③ GRAND TRANSPARALLEL lit.


simple HT
(spaghetti)

1980 model: TRANSPARALLEL
side by side
with shared material


Re-use
&
intercomparison
SIDE BY SIDE

hexaple

MTG MAY 3 0 1995 Ø

TN,

Mr. Masatomo Togasi
at Ochanomizu University.

1 Mr. Togasi's request

2 CONNECTION, WATER, WORDS

3 ... and General Semantics, General Schematics

4 ABSTRACT PHILOSOPHY OR MOVIES?

5 A STEREO VIEW OF THE MEDIA FUTURE.

6 TED'S RELATIVE POSITION

7 THEORY OF VIRTUALITY

11 we must get beyond paper!

13 THE XANALOGICAL MODEL

---

18 A last thought on virtuality.

MTG MAY 3 0 1995 1

Mr. Togasi's request:

"Tell me about your point of view."

Okay —

MKG MAY 30 1995 2

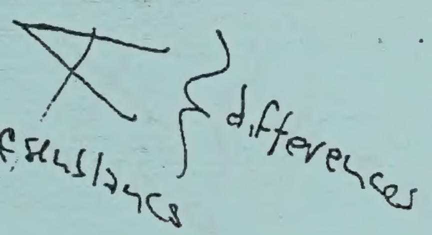
EVERYTHING IS DEEPLY CONNECTED.
"deeply intertwingled"

No artificial separation   THEREFORE HYPERTEXT
instead of   (real connections)
hierarchy

Water cricket — more & more
far-fetched resemblances

Remembering
Understanding
Visualizing

WORDS



1950 "Rasho-Mon"

MTG MAY 30 1995 3

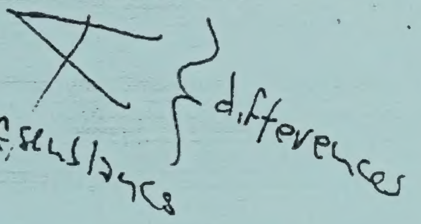
EVERYTHING IS DEEPLY CONNECTED.
"deeply intertwingled"

No artificial separation THEREFORE HYPERTEXT (real connections)
instead of
hierarchy

Water cricket — more & more
far-fetched resemblances

Remember
Understand
Visualize

WORDS



1950 "Rashomon"

1951-53 Korzybski & Hayakawa — "General Semantics" → "The Map is not the Terrain"
— models and descriptions can mislead
(we can't live without them)

1958 "Schematics, Systematics, Normatics" — FIRST UNIF. OF MY PHILOSOPHY

Since then: GENERAL SCHEMATICS.

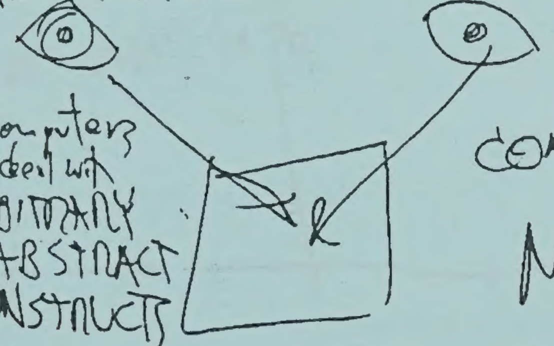
MTG MAY 30 1995 4

ABSTRACT PHILOSOPHY OR MOVIES?

MTG MAY 3 0 1995 5

1959 CONFLICT: Academic studies? PHILOSOPHY & ABSTRACTION Show biz & Movies?

1960: COMPUTER COURSE.



Computers deal with ARBITRARILY ABSTRACT CONSTRUCTS

COMPUTERS were MEDIA MACHINES

∴ All works & showbiz

All publicity will be electronic & on-line from networks

Free quotability, automatic royalty

WHAT CONSTRUCTS?
Had to be General

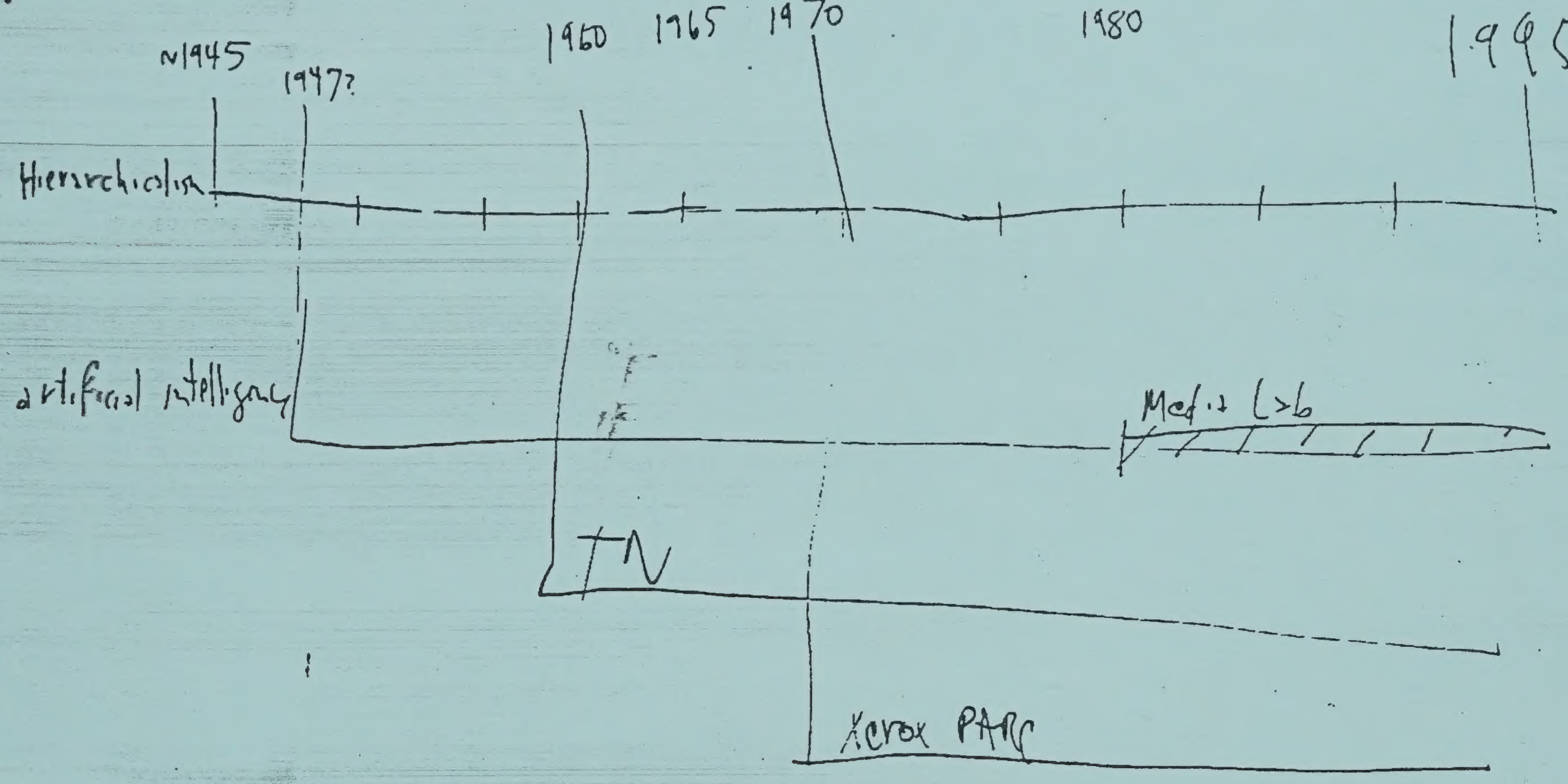
I WOULD BUILD IT.

A STEREO VIEW OF THE MEDIA FUTURE.

TED'S RELATIVE POSITION

MTG MAY 30 1995 6

SCHOOLS OF COMPUTER THOUGHT


~1945
1947?
1960
1965
1970
1980
1995
Hierarchicalism
artificial intelligence
Media Lab
TN
Xerox PARC

MB MAY 30 1995

THE THEORY OF VIRTUALITY ——

MTG MAY 30 1995 8

TN's THEORY OF VIRTUALITY

REAL ←—— VIRTUAL

"In reality" "seeming"

TWO PARTS

Conceptual Structure of simple description

Feel

SOFTWARE

ARBITRARY Conceptual Structure

Tuning / Delicate Adjustments

MTG MAY 30 1995 9

TN's THEORY OF VIRTUALITY

REAL ←—— VIRTUAL

"In reality", "seeming"

TWO PARTS

	Conceptual Structure or simple description	Feel
Architecture	# of rooms, description	—
Car	Design, category	How it seems
Movie	Script, characters, story	Atmosphere suspense other qualities

FIELD	REALITY	VIRTUALITY
Architecture	Bricks, wood, metal	Appearance of building Character of space
Car	Metal	Appearance Handling Smell Door slam
Movie	Photographed in front of cardboard etc	(Movie)

MTG MAY 30 1995 10

TN's
THEORY OF VIRTUALITY

Includes: INTERACTIVE SOFTWARE
ARCHITECTURE
AUTOMOTIVE DESIGN
ART
:
MOVIES

INTERACTIVE SOFTWARE IS A BRANCH OF MOVIE-MAKING.

Events on a screen
that affect the heart & mind
of the viewer,

+ interaction.

TECHNICALITIES ARE SUBORDINATE
to
PSYCHOLOGICAL
CONCEPTUAL
& ARTISTIC
design & unification.

DIRECTOR

NTG MAY 3 0 1995 11

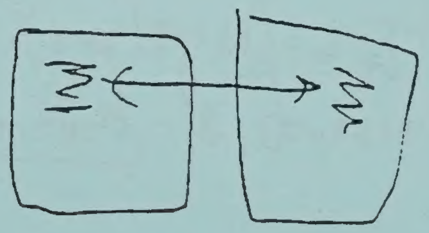
POPULAR SOFTWARE

- WP
- Spreadsheet
- Macintosh windows

} SIMULATE PAPER!

We must go FAR beyond paper!

TN windows, 1967



MRS MAY 3 0 1995 12

(At restaurant)
TN, Togasi.

THE XANALOGICAL MODEL.

RANGE of Xanalogical systems
parameters = granularity & divisibility

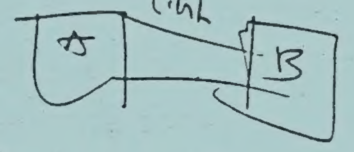
XANALOGICAL
BASIC MODEL

MTG MAY 30 1995 | 3

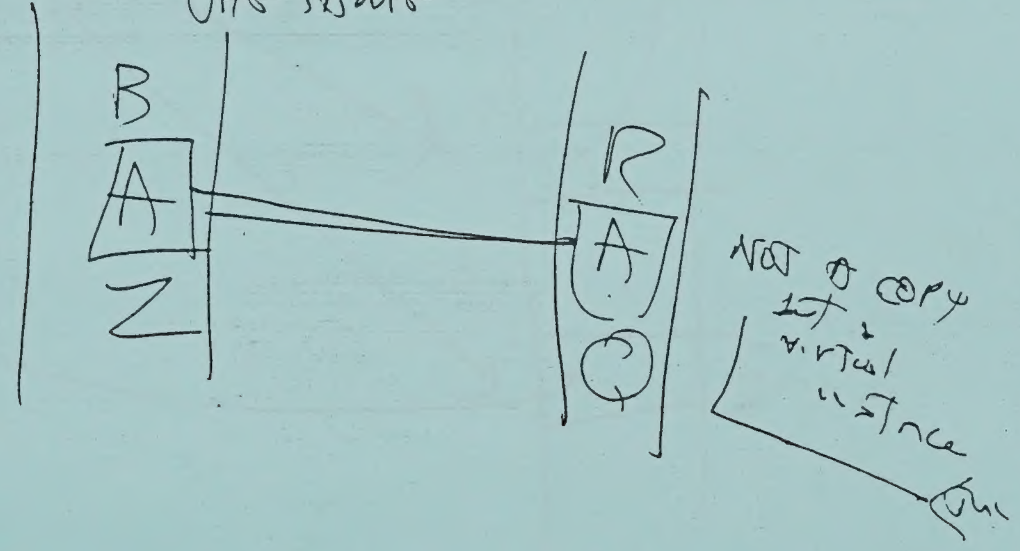
ELEMENTS — text
pixels
sound samples
frames

LINKS
connections between parts of elements which are DIFFERENT

TRANSCLUSION

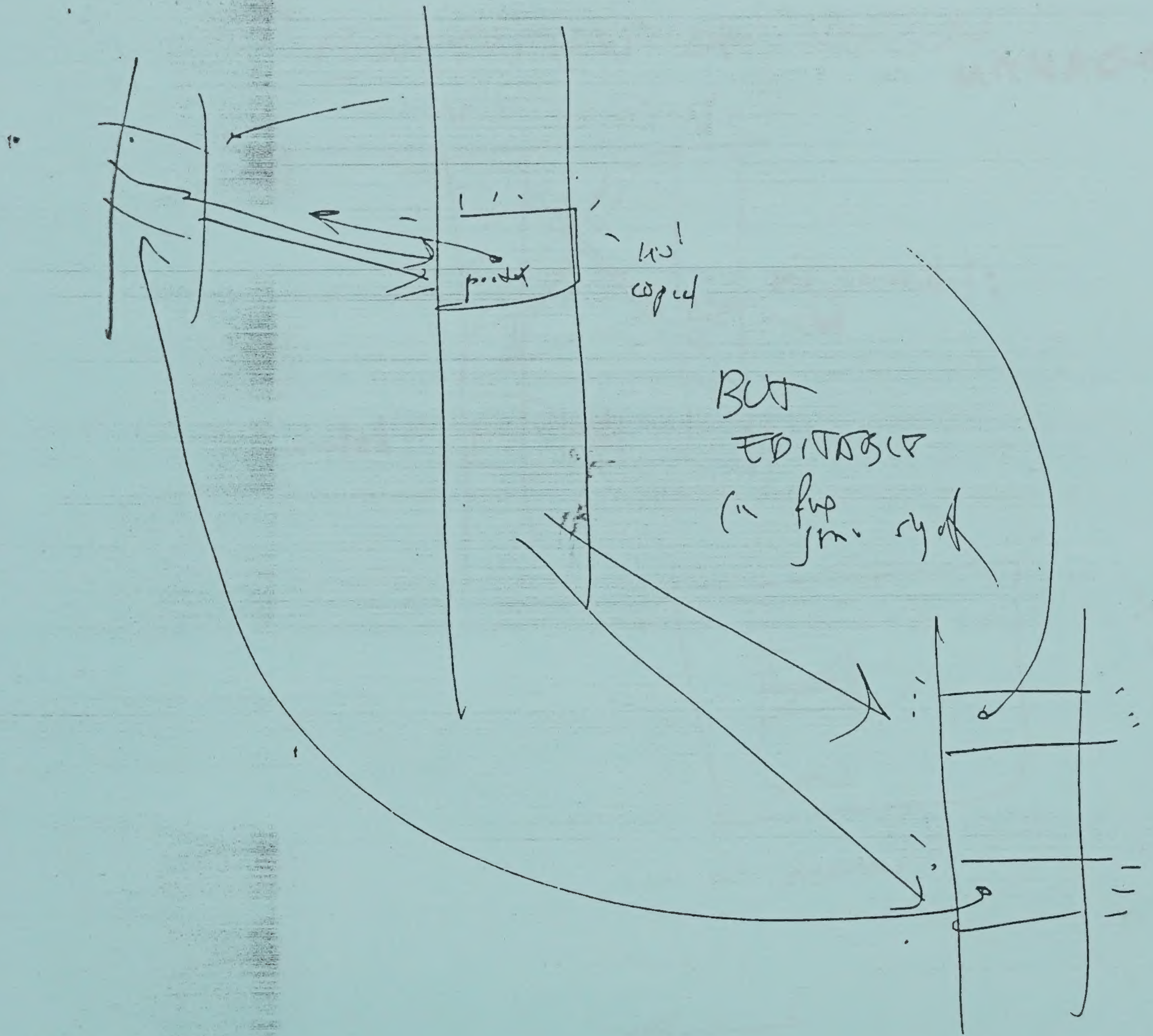


connection
between parts of elements
which are
THE SAME



NOT A COPY
1st a virtual
instance

INSTEAD OF COPYING: TRANSCLUDE



not copied

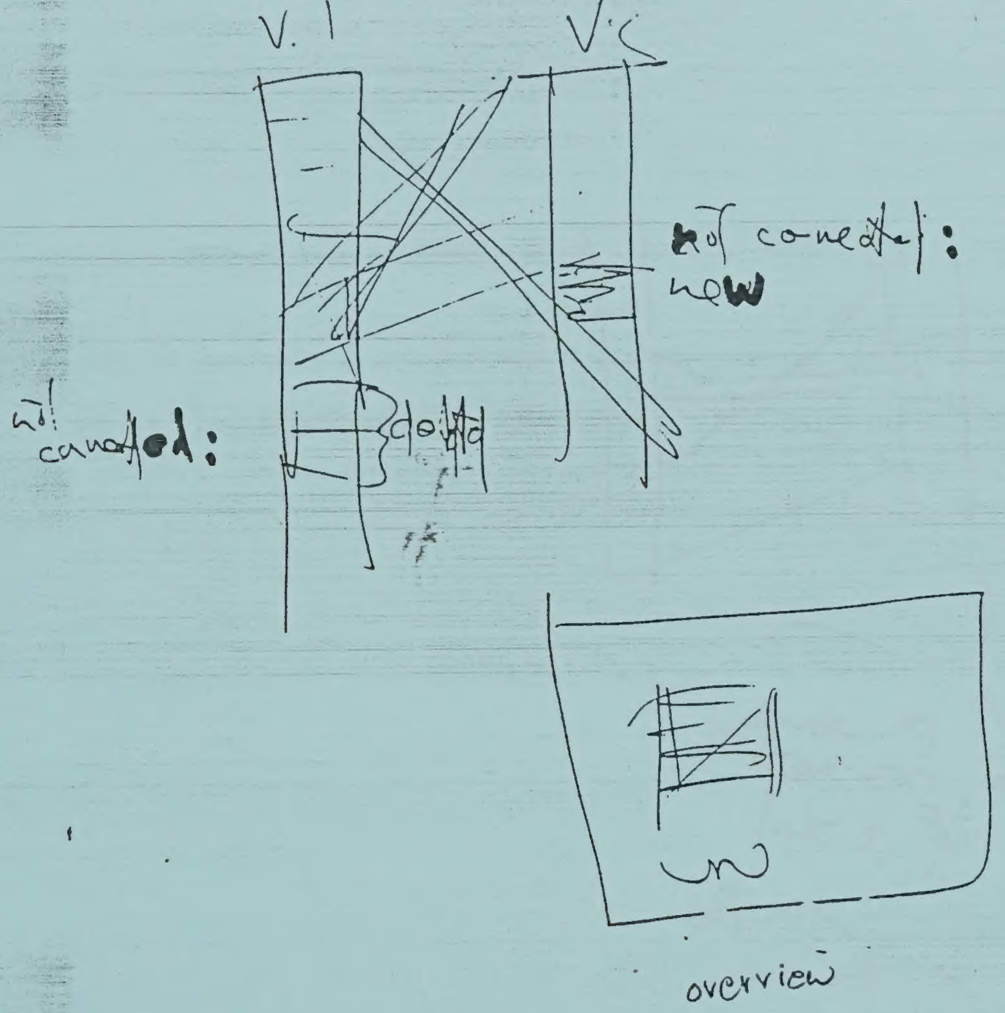
BUT
EDITABLE
(in [illegible]
[illegible] syst)

TEXT -

MG MAY 30 1995 15

Problem 1

OVERVIEW OF VERSION MANAGEMENT

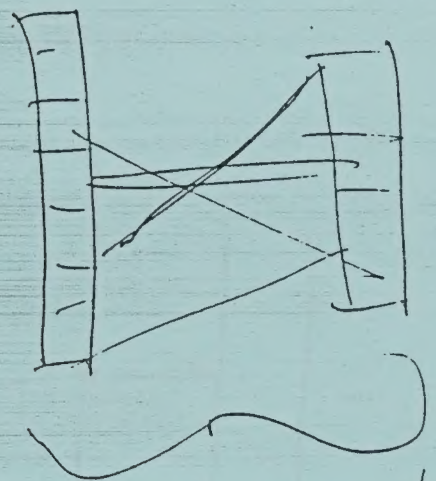

v.1
v.5
not connected:
new
not
connected:
deleted
overview

See what
happened
between
versions!

traversibility back to original

MRG MAY 30 1995 16

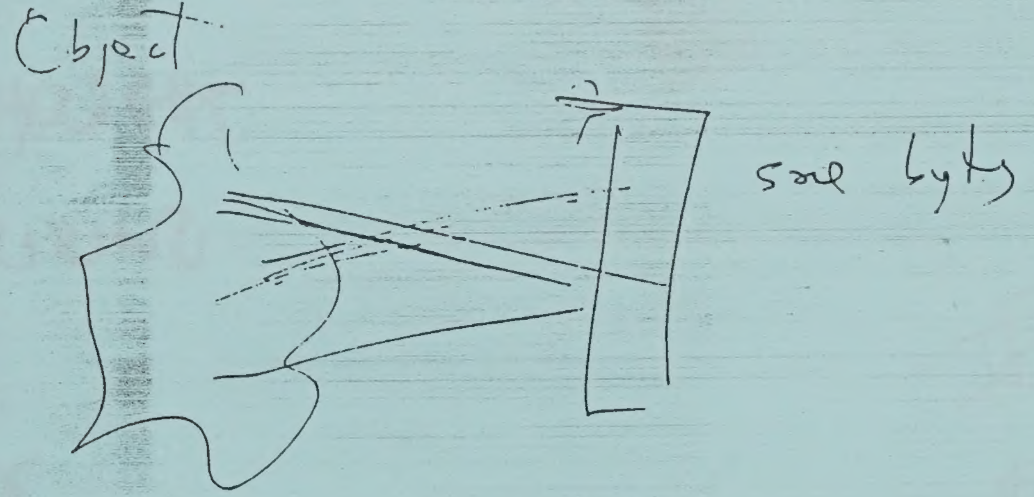
LARGE GRAIN XANALOGICAL SYSTEMS
1965 Zipper lists or Zips
(B's chunks — eg paragraphs)

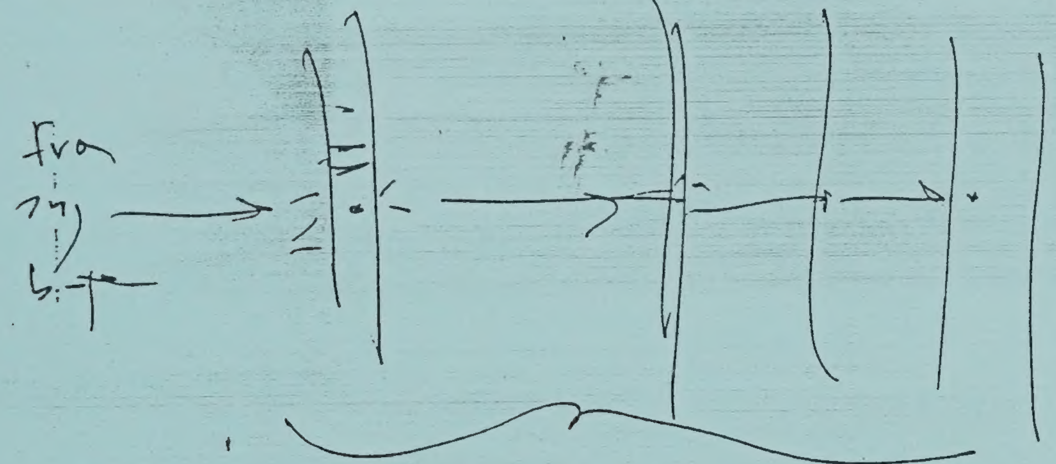


between any two zip
there can be
links, &/or transclusions, or no connections
between
a cell in zip A
and a cell in zip B
here as always the [illegible] connects
connections are maintained
as sequence changes

MTG MAY 30 1995 17

1981-8 vers. —— GRANULAR TO BYTE


Object
some bytes


from any bit

is every public document
or private doc
to which you have acces

⟷

TOTAL TRANSMISIBILITY

MAY 3 0 1995 18

A LAST THOUGHT
SUMMARIZING
TN'S
THEORY OF
VIRTUALITY.

~~Files~~
~~Hierarchies~~
~~Metaphors~~
~~Agents~~
~~Applications~~
~~Interface~~
~~WP~~
~~DTP~~

MTG-94.12.7 0

YT, TN & group.

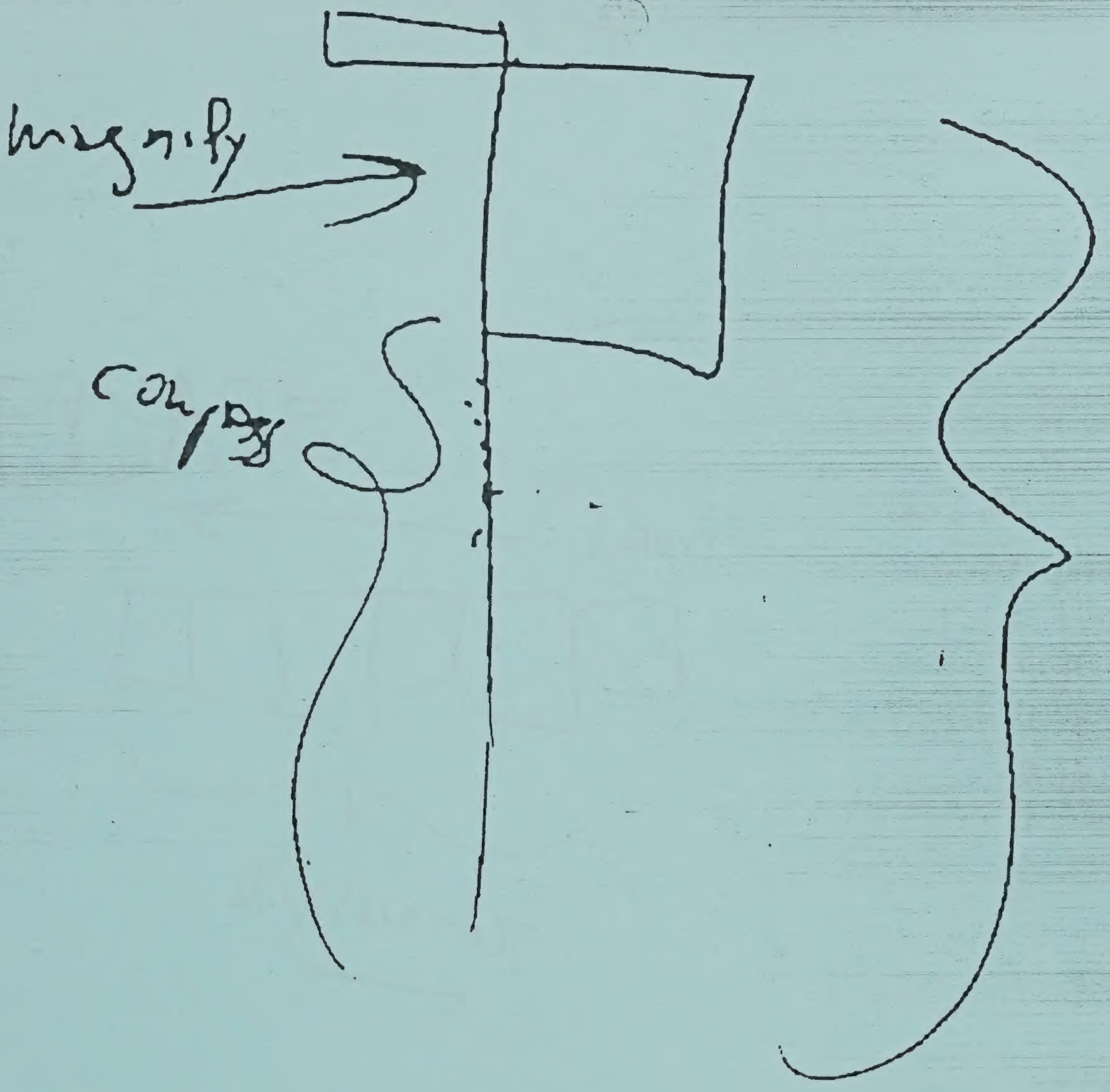
1 SUMMARY OF SEAHORSE VIEW ADVANTAGES
2 THE UPDATE PROBLEM
3 PROBLEM OF VIEWING ALTERNATIVES
4 CONTROL DIAGRAMS FOR ZIPS
7 A UNIX INTERFACE FOR BEGINNERS?
8 MOSAIC-LIKE INTERFACE USING SEAHORSES
9 OUR "MOSAIC" — THREE PROPOSED STAGES
10 MR. OOKUBO'S PRESENTATION —
Overview of Zips & Our Design

15 THE NETWORK MINT — a micropayment company
20 The Checklet system

26 COMPETITION TO OUR ENDEAVORS
27 PROPOSED DOUBLE STRATEGY: LOW AND HIGH END

28 Tomorrow's EFF / Sensemedia AEROSMITH INTERNET CENSORSHIP FORUM

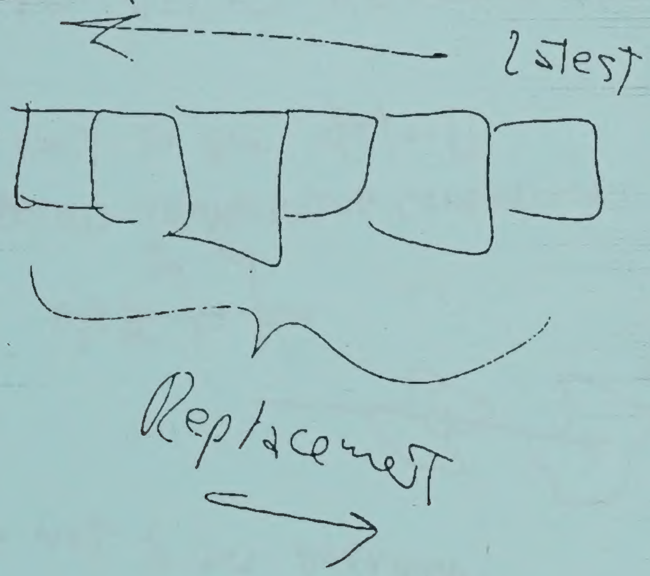
MRG DEC 7 1994 1

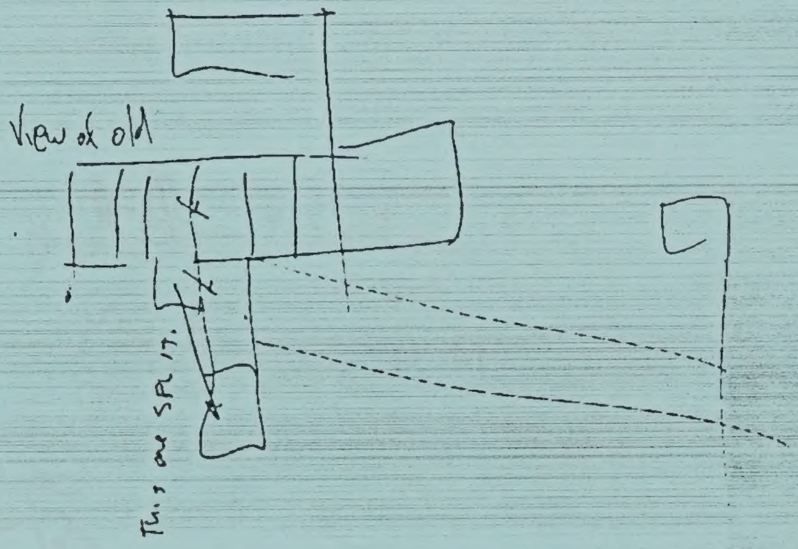

magnify
compass

Seahorse
Shows several relation
Sequence
Items (big or tiny)
Magnified portions
Outside lines
Outside transition

MTG DEC 7 1994 2

UPDATE


latest
Replacement


View of old
This one split.

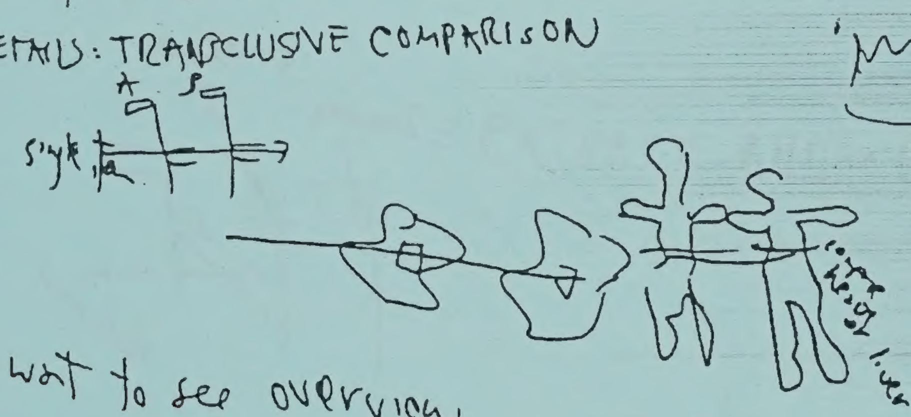
MTG DEC 7 1994 3

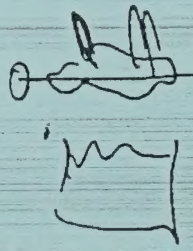
GREAT PROBLEM:
HOW TO VIEW ALTERNATIVES

Control/conflict of computer graphics & visualization

① You want to see details

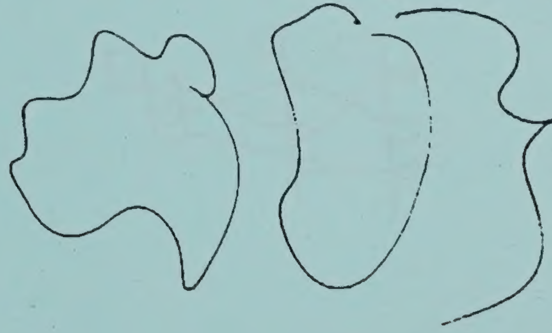
DETAILS: TRANSCLUSIVE COMPARISON





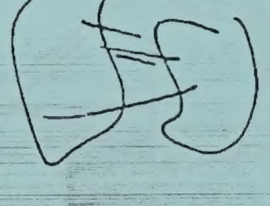
Transclusion
= spot
= kushi

② You want to see overview



COMPARE OVERALL PICTURE

⇒ Best suggestion?
EACH AUTHOR OR COMMENTATOR CREATES OVERVIEW



Intercompared by links

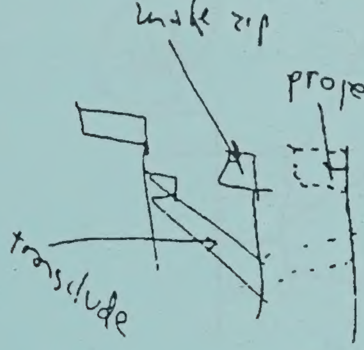
↙

Detail comparison can be ~~implement~~ implemented.
OVERVIEW COMPARISON IS A DIFFERENT PROBLEM.

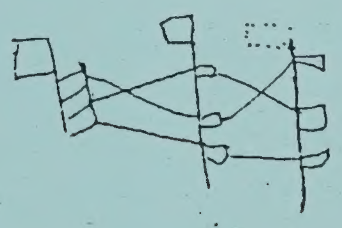
MTG DEC 7 1994

CONTROL DIAGRAM

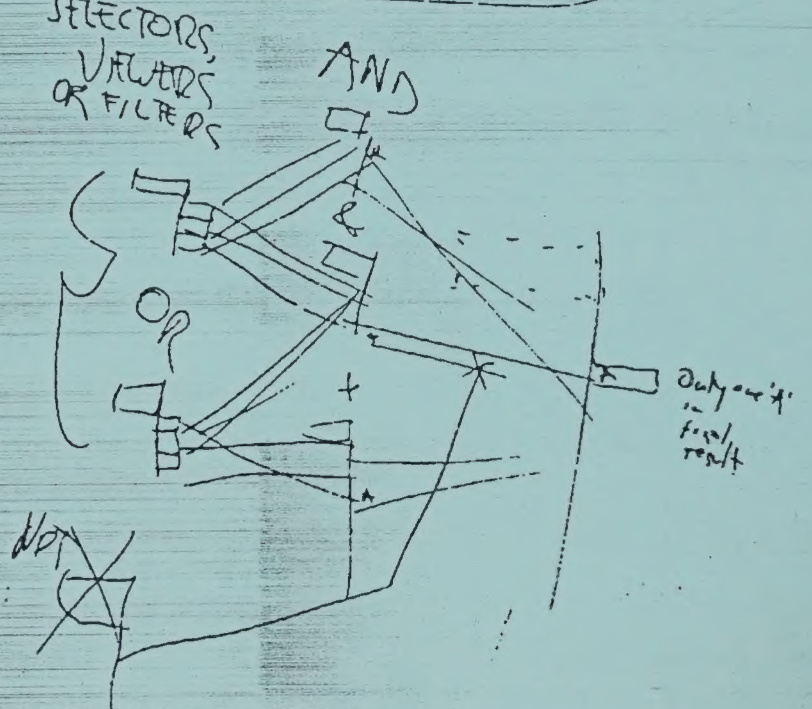
Something like:

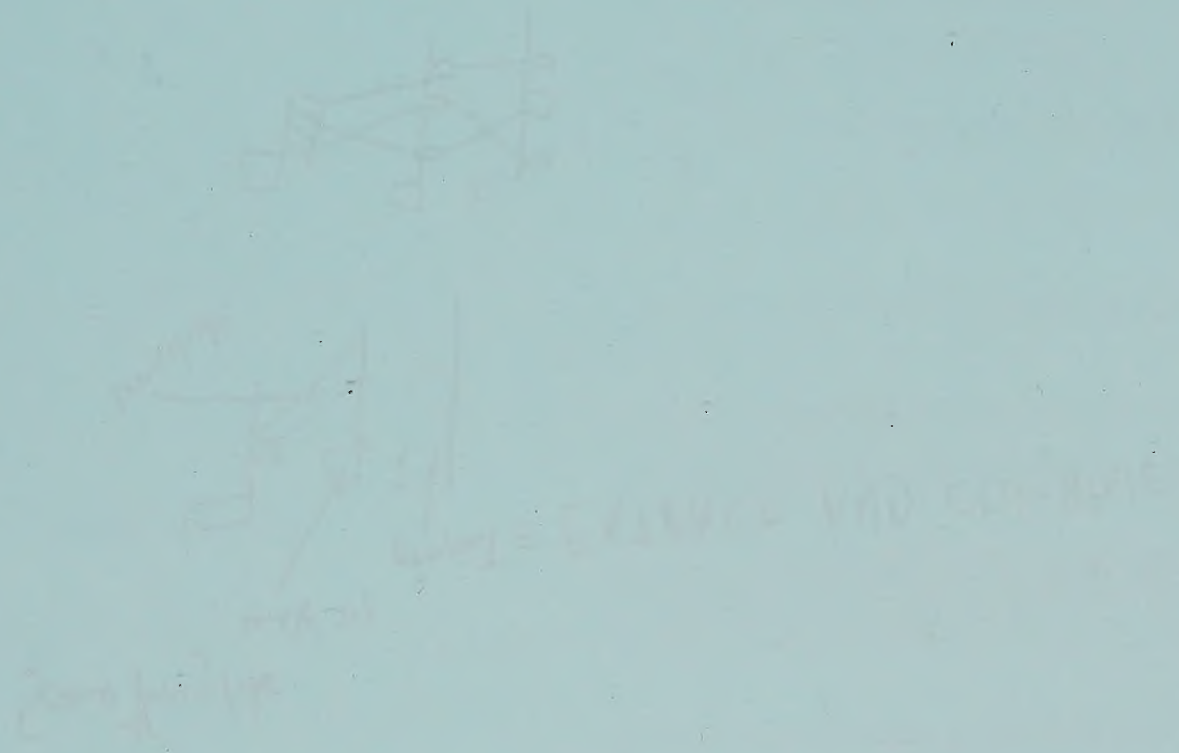

make zip
transclude

project ≡ EXTRACT AND COMBINE



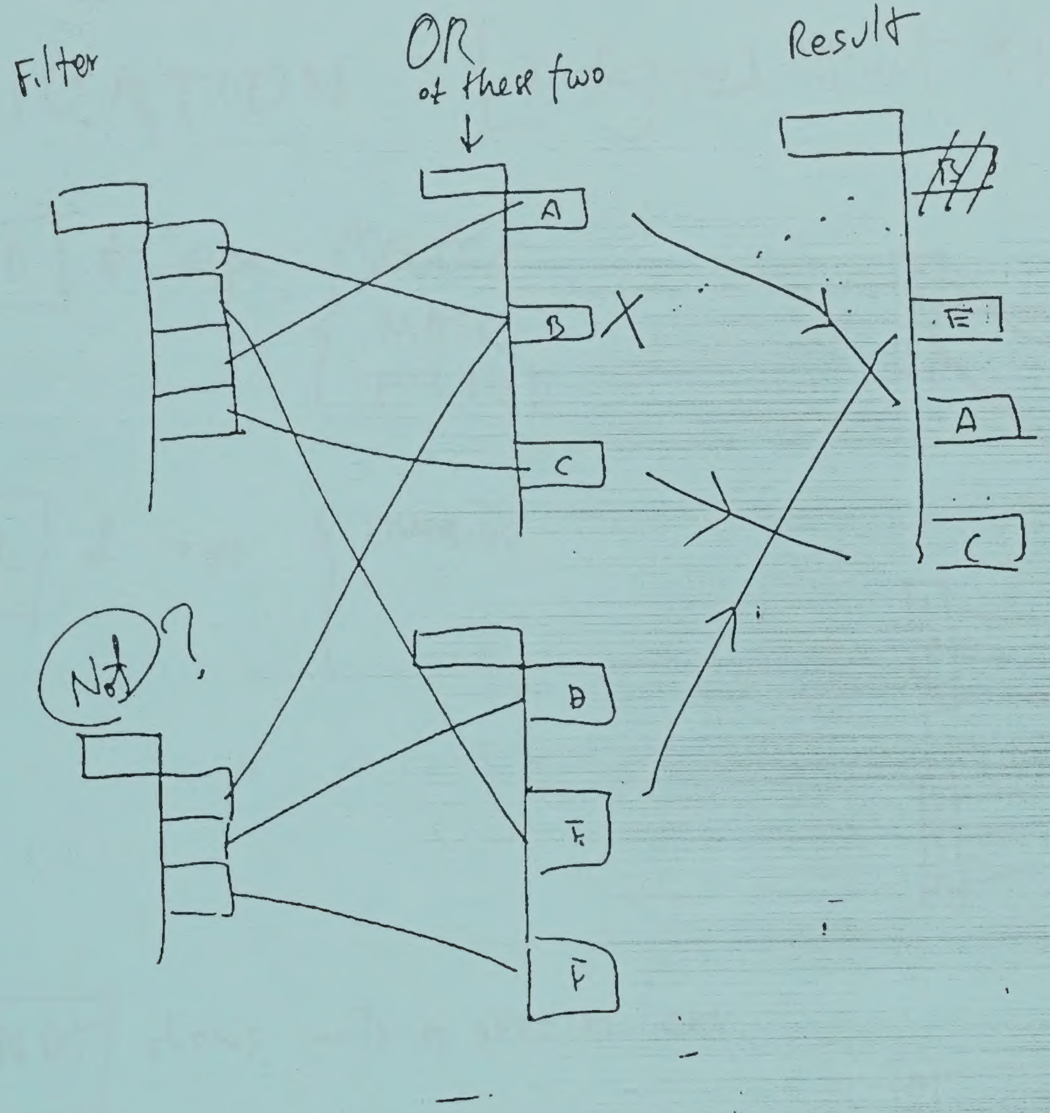
BOOLEAN VIEWS


SELECTORS, VIEWERS OR FILTERS
AND
&
OR
+
NOT
Only one '*' in final result



CONTROL DIAGRAM

MTG DEC 7 1994 5


Filter
OR
of these two
Result
Not?
A
B
X
C
D
E
F
E
A
C

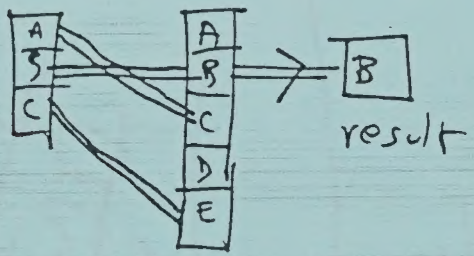
WE DEC 3 [illegible]

MTF DEC 7 1994 6

CLARIFICATION [I figured it out 94.12.10] & ZIP VISUAL SELECTION

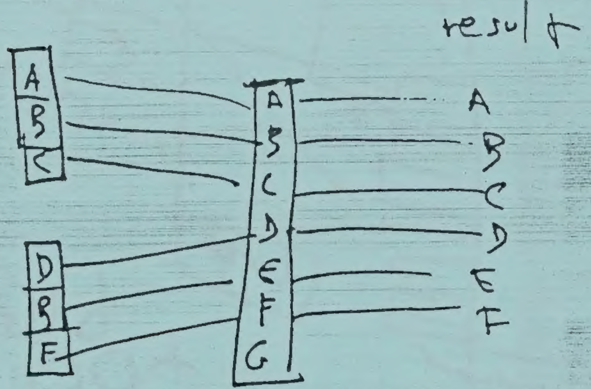
TML

AND of zips { SELECT
MASK
FILTER


A
B
C
A
B
C
D
E
B
result

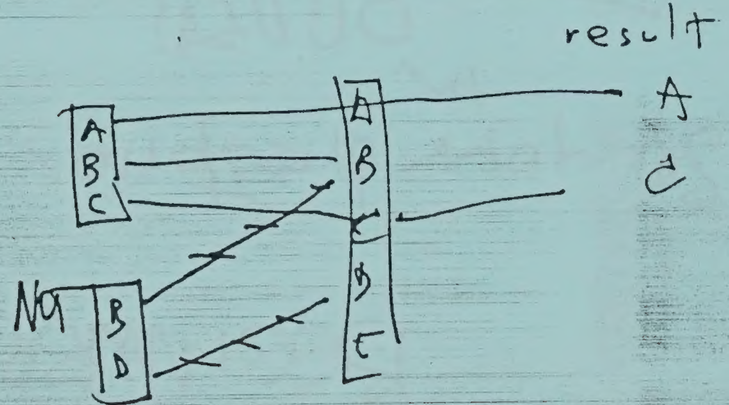
SERIAL view

OR of zips { COMBINE
⋮


result
A
B
C
D
E
F
A
B
C
D
E
F
G
A
B
C
D
E
F

PARALLEL view

NOT shows with A SPECIAL RAY.


result
A
B
C
NOT
B
D
A
B
C
B
E
A
C

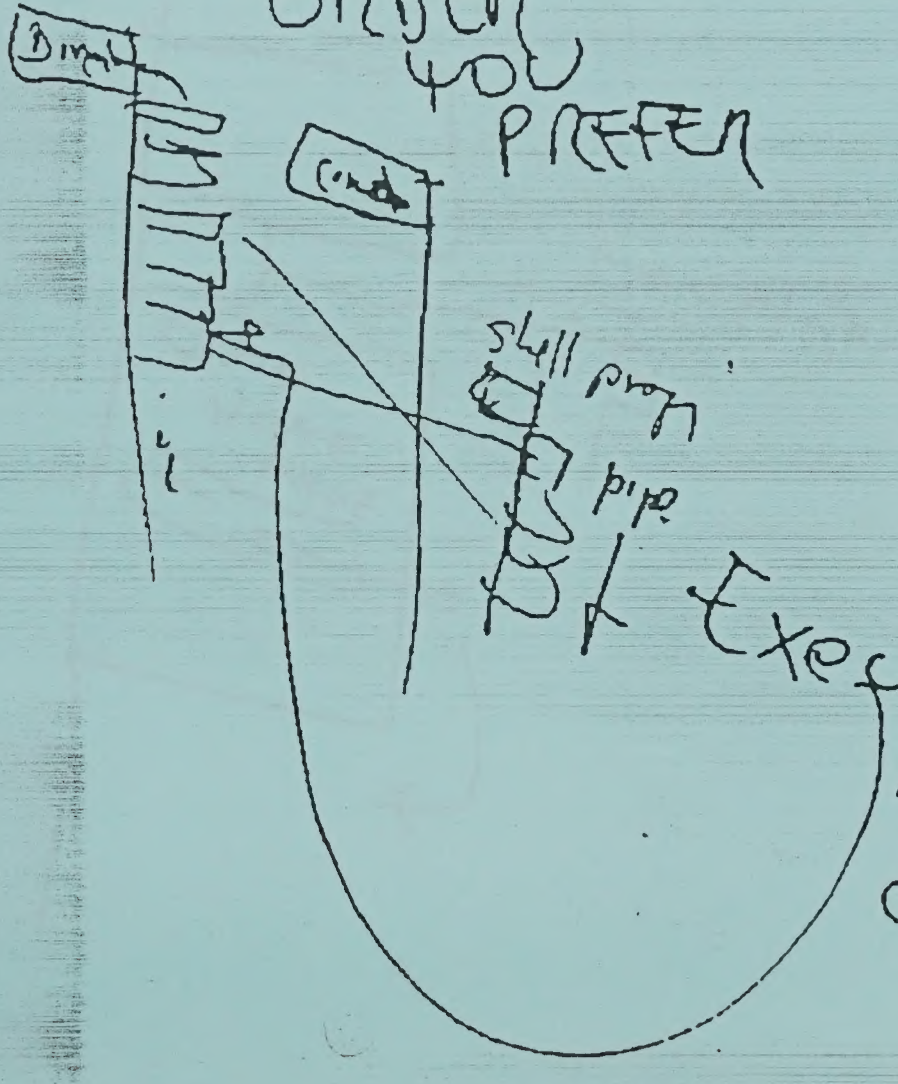
PARALLEL CONTRADICTION.

TML

UNIX VISUALIZATION
&
BEGINNER'S INTERACE

MTC DEC 7 1994 7

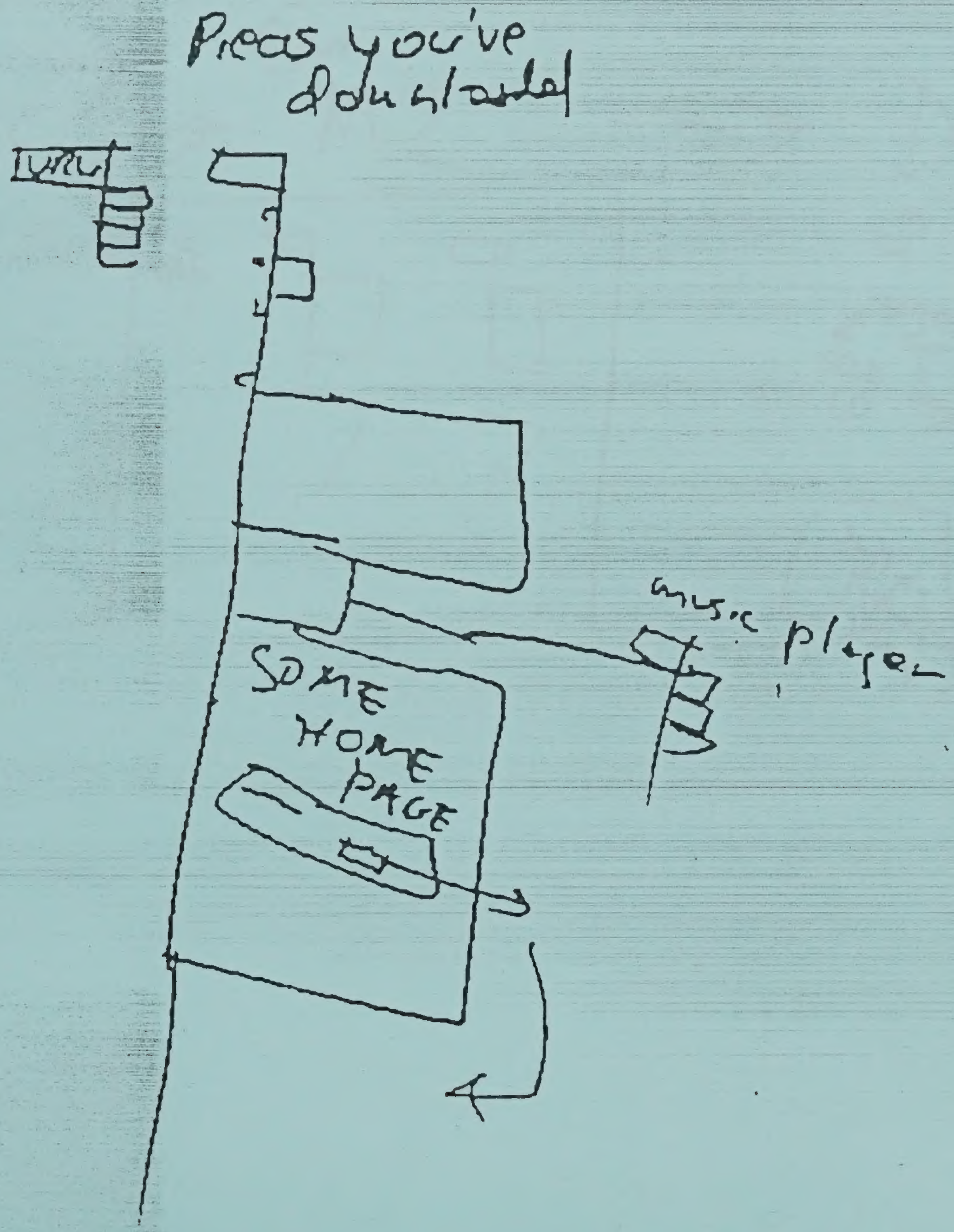
See your directories
in
ORDER
YOU
PREFER


Dir
Cmd
shell prog
pipe

Execute
by
click

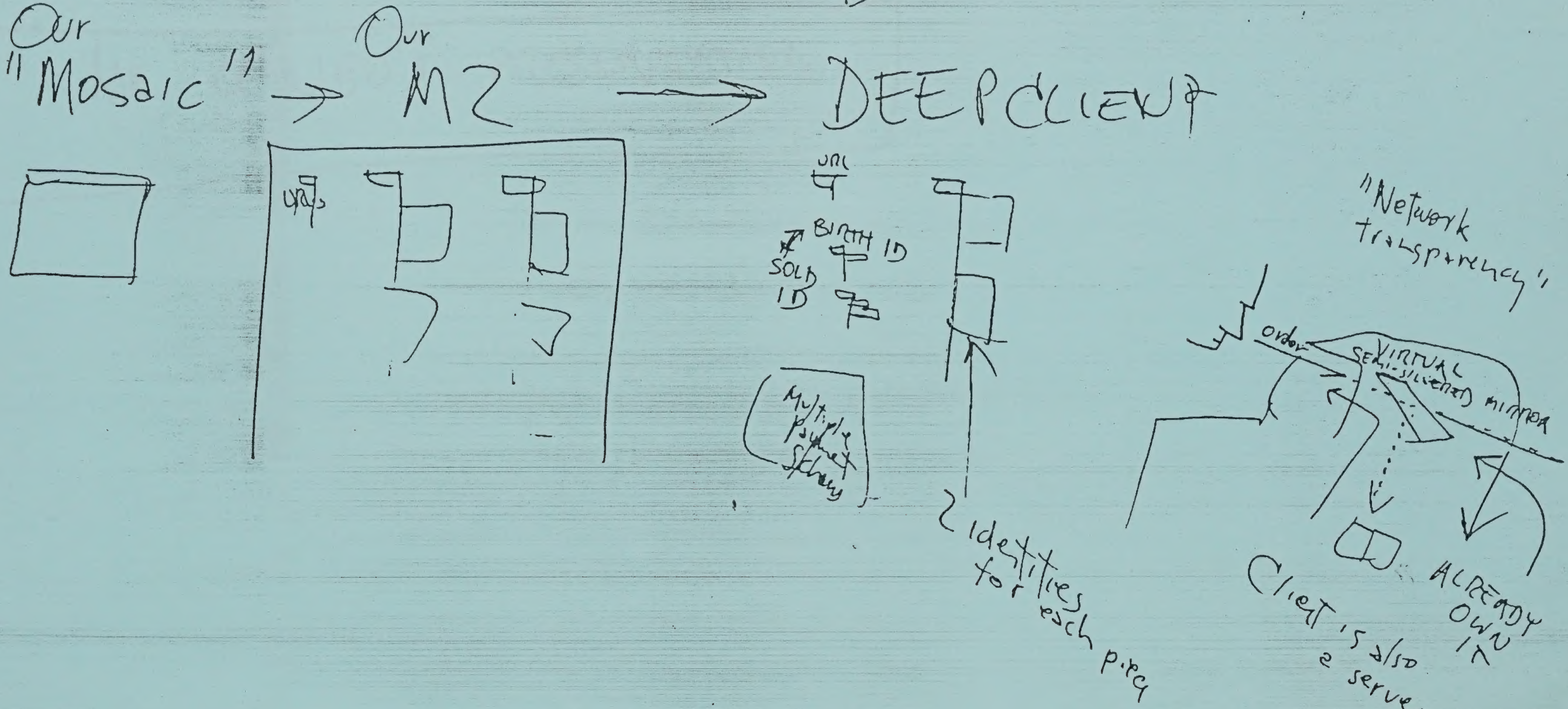
MOSAIC-LIKE INTERFACE

MTG DEC 7 1994 8


Press you've downloaded
URL
SOME HOME PAGE
music player

MRG DEC 7 1994 9

Our M3:


Our "Mosaic"
Our M2
DEEPCLIENT
URLs
URL
BIRTH ID
SOLD ID
Multiple Payment Schemes
2 identities for each piece
"Network transparency"
order
VIRTUAL SEMI-SILVERED MIRROR
ALREADY OWN IT
Client is also a server.

WS

MR DEC 7 1994 JO

MR. OOKUBO'S PRESENTATION.

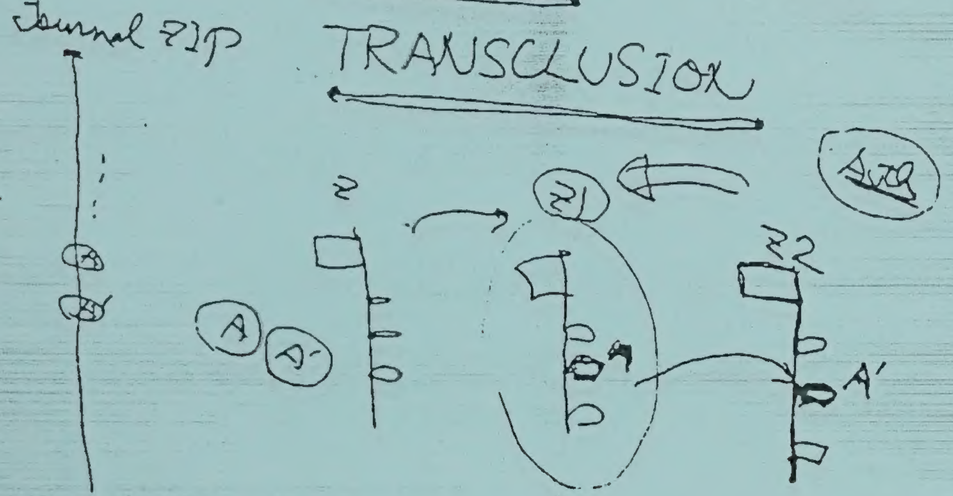
DEC 7 1994 11

MODEL

INTERFACE

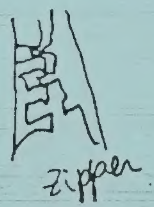
ZIP(LEX)
ZIP
ITEMS

VERSION


Journal ZIP
TRANSCLUSION
z
z1
z2
A
A'
A'

ZIP

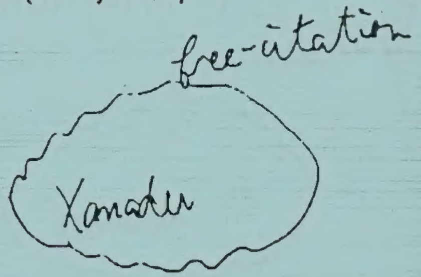
Transclusion



(inclusion)
o Link
o Fullfilled

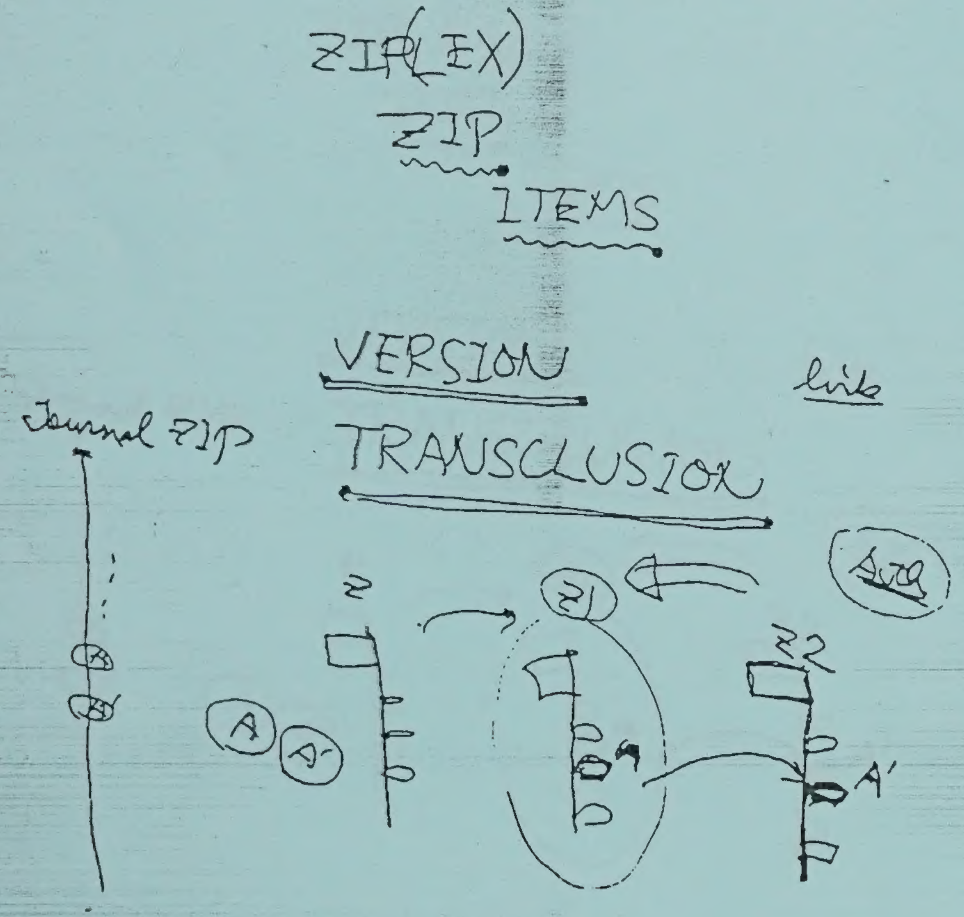
TransCopyRight

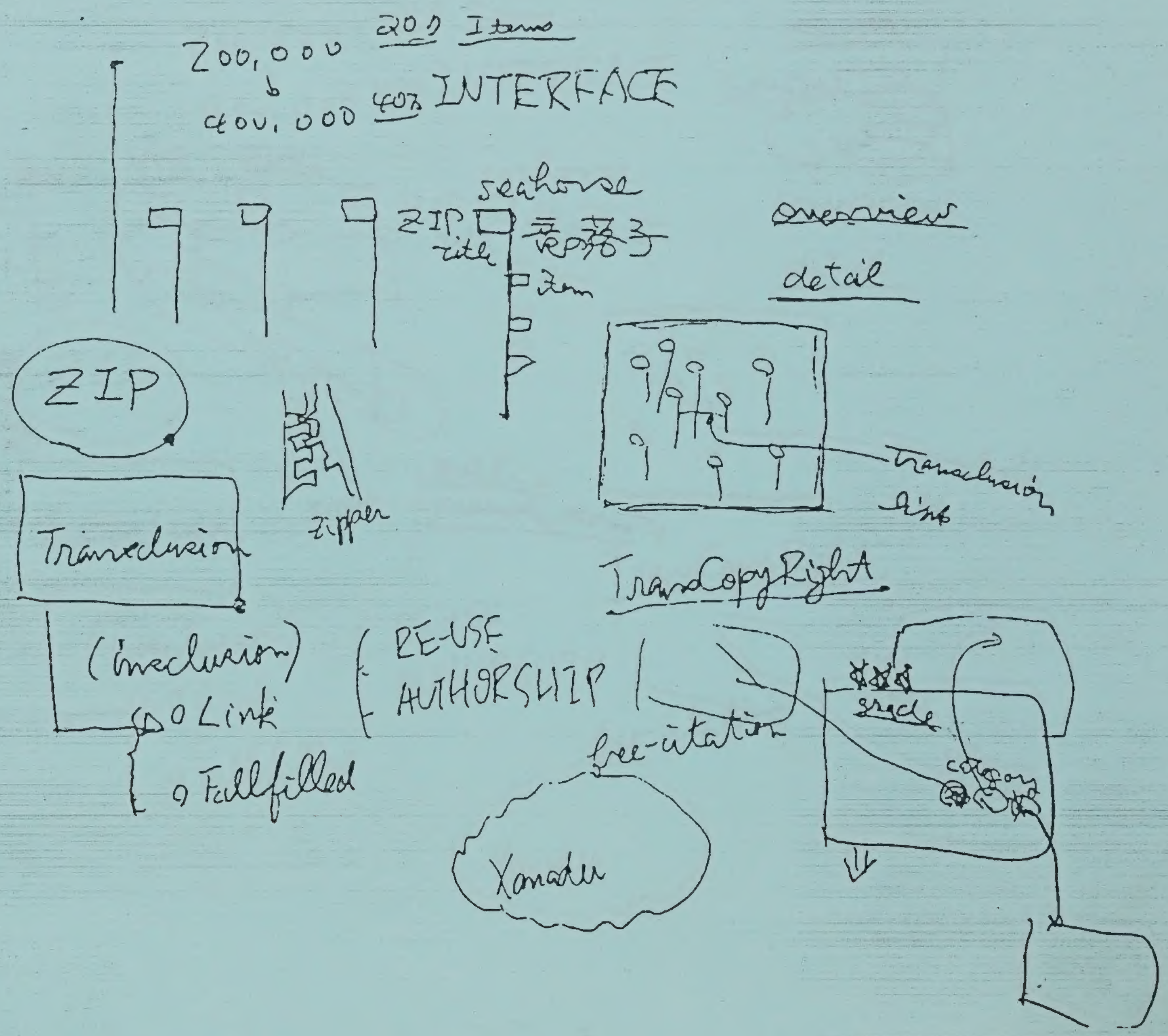
RE-USE
AUTHORSHIP


free-citation
Xanadu

DEC 7 1994 12

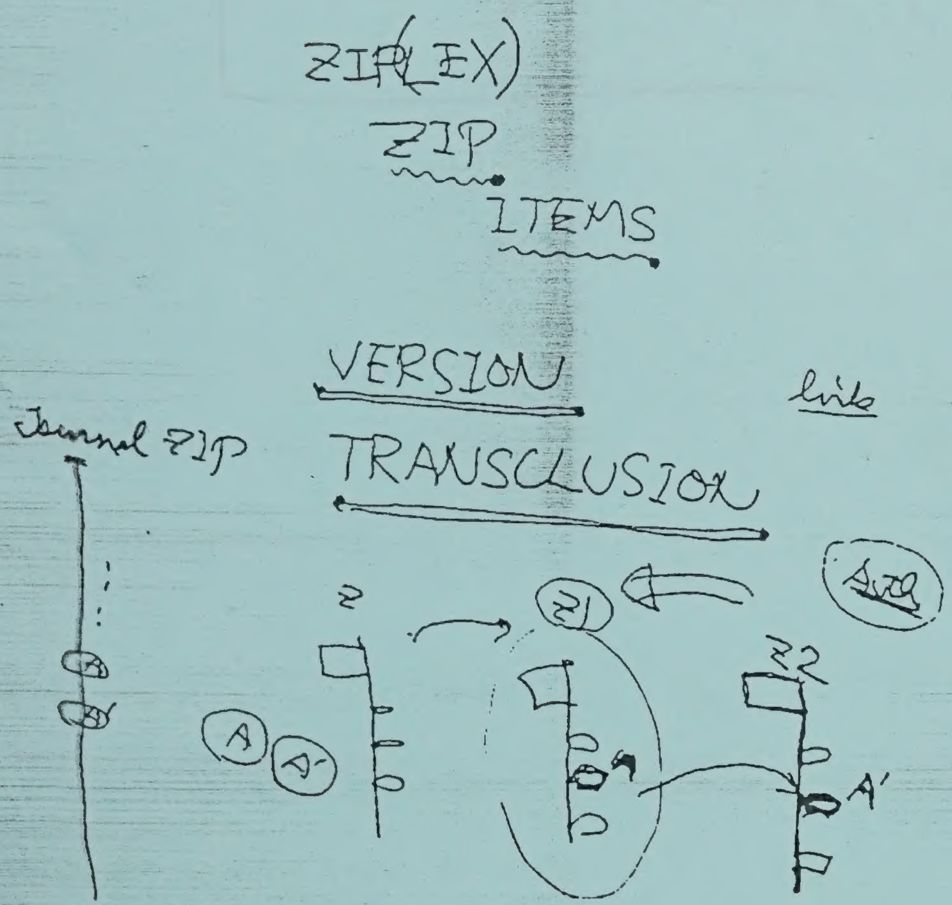
MODEL

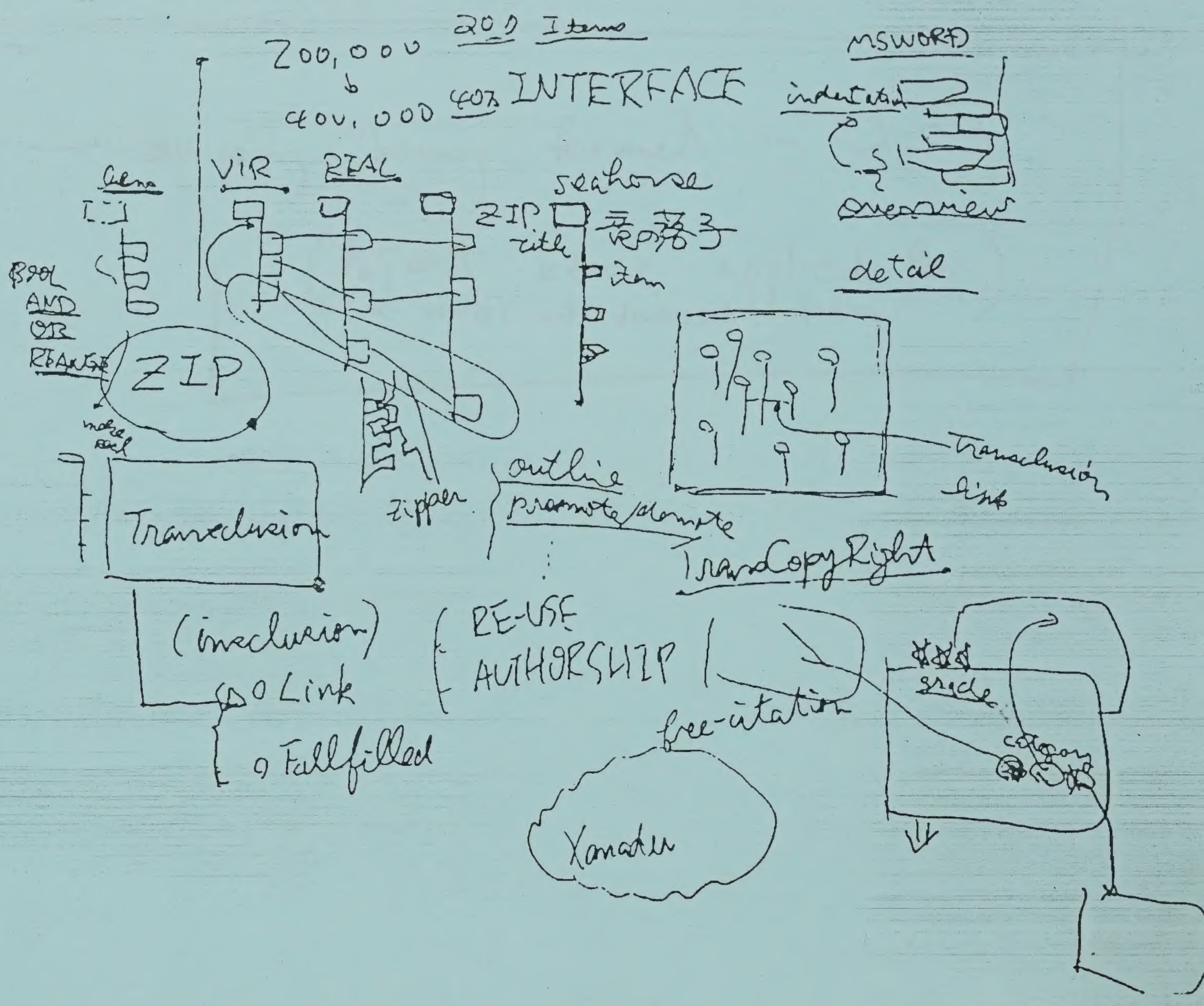

ZIP(LEX)
ZIP
ITEMS
VERSION
link
Journal ZIP
TRANSCLUSION
Z
Z1
Z2
A
A'
A'


200,000 200 Items
400,000 400 INTERFACE
seahorse
ZIP title
竜の落子
item
overview
detail
ZIP
Transclusion
(Inclusion)
o Link
o Fullfilled
zipper
transclusion link
TransCopyRight
RE-USE
AUTHORSHIP
free-citation
Xanadu
grade
category

MTG DEC 7 1994 13

MODEL


ZIP(EX)
ZIP
ITEMS
VERSION
TRANSCLUSION
link
Journal ZIP
Z
Z1
Z2
A
A'
A'
Auth


200 Items
200,000
400,000
40%
INTERFACE
MSWORD
indentation
overview
detail
Clone
BOOL
AND
OR
RANGE
ZIP
make real
VIR
REAL
seahorse
ZIP
title
意の落子
item
zipper
Transclusion
(inclusion)
o Link
o Fullfilled
outline
promote/demote
TransCopyRight
RE-USE
AUTHORSHIP
free-citation
Xanadu
transclusion
link
guide
category

MTG DEC 7 1994

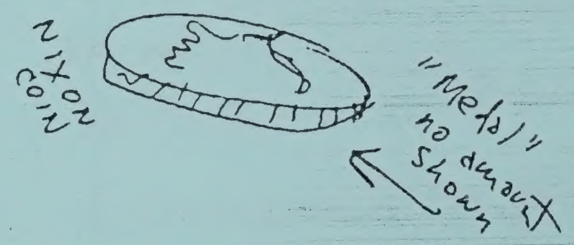
"The Network Mint" — company being formed in U.S.A.

(Patent being applied for on aspects not discussed today.)

MTG DEC 7 1994 16

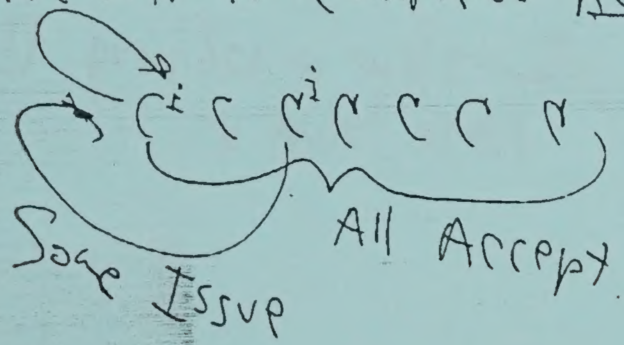
"~~XANADU ACCOUNTS~~" ⟹ "The Network Mint™"

Place where coins are made
U.S. Mint – Denver Mint —
to be like Company = "The Franklin Mint"
issuing imitation coins


NIXON COIN
"Metal" no amount shown

OBJECTIVE: A clear, simple, widespread DISTRIBUTED SYSTEM OF CREDIT for very small payments.

ANY PARTICIPATING COMPANY MAY ISSUE MINTCARDS.
A PARTICIPATING COMPANY ACCEPTS MINTCARDS


c c c c c c c
Some Issue
All Accept

Mint & other
prepay
or postpay
cards but you
issue both.

U.S. Law:
YOU CANNOT BOTH
LEND WITH INTEREST
& BORROW WITH INTEREST
UNLESS YOU ARE
A BANK.

MTG DEC 7 1994 17

The Network Mint offering:

GENERALIZED SYSTEM
for
SMALL PAYMENT
&
DISTRIBUTED TRUST.

LIKE XANADU:
No central authority
No "truth"
Licensed software packages

DELIVERABLE SOFTWARE PACKAGES.

N. Mint does not issue credit

It provides a systematic means for others to issue credit.

MTG DEC 7 1994 18

NETWORK MINT
SOFTWARE PACKAGES

Packages to bind into user program
    Establish account
    Pay account (by other means)
    SESSION INTERCHANGE

Packages for Issuer
    Establish Account
    Send bill to customer
    Verify to session node
    Pay session node
    RETURN OF CHECKLETS

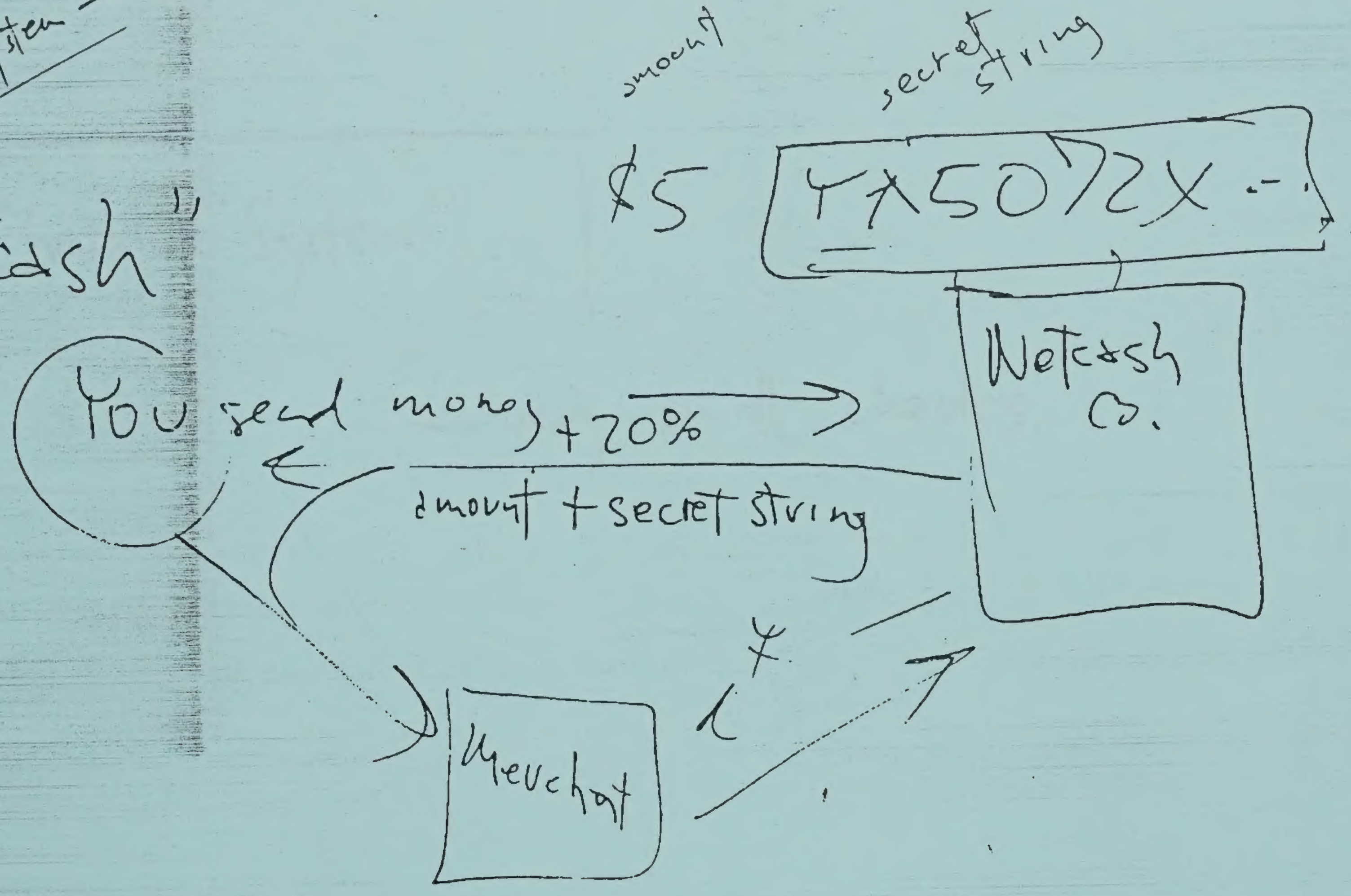
Packages for session node

Packages for CLEARINGHOUSE

DEC 7 1994 19

A comparable system –

"Netcash"


amount
secret string
$5
YX5072X…
Netcash Co.
You
send money + 20%
amount + secret string
Merchant

"Scrip"
(esp. during 1930s)
Coupon
Voucher

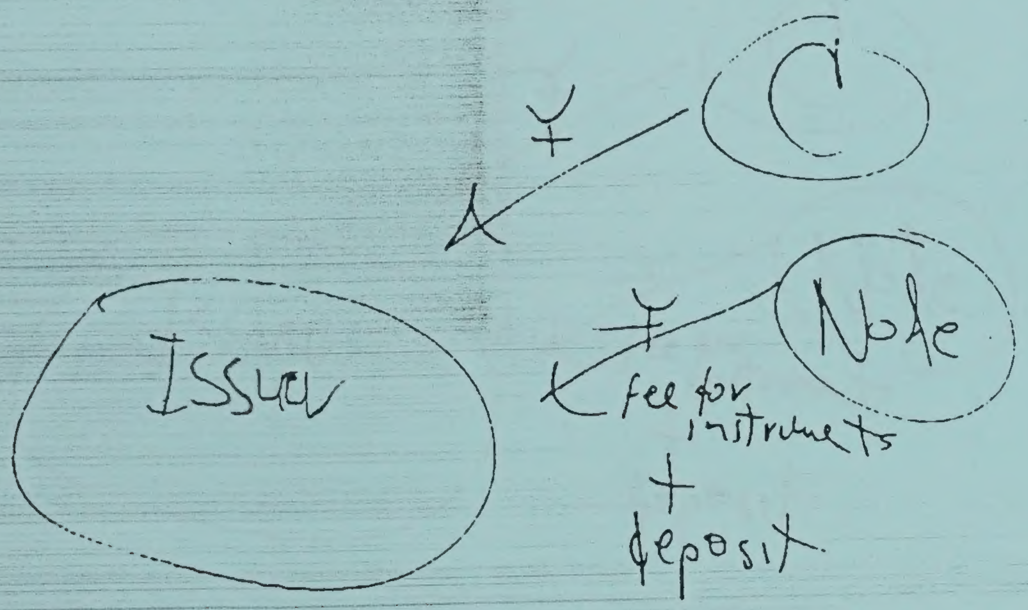
MTG — DEC 7 1994 20

"Checklet System"

— very small checks.

MTG DEC 7 1994

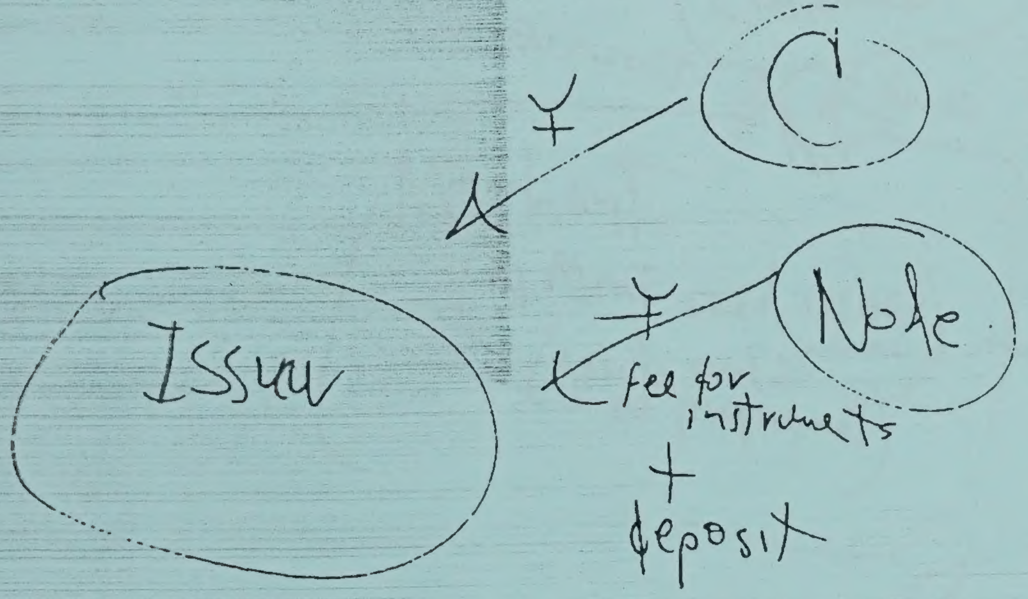
CHECKLET PURCHASE ≃ CHECKING ACCOUNT


Ci
¥
Issuer
Note
¥
fee for instruments
+
deposit

Instruments may subtract the deposit until exhausted

MG DEC 7 1994 22

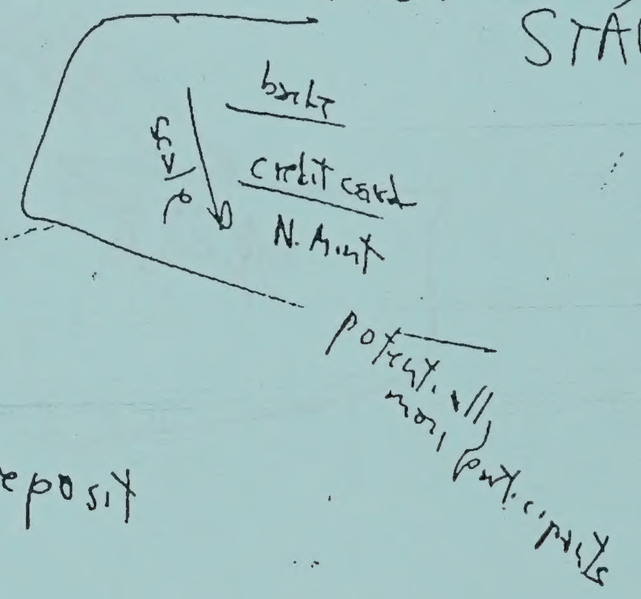
CHECKLET PURCHASE ≃ CHECKING ACCOUNT


C
¥
Note
¥
fee for instruments
+
deposit
Issuer

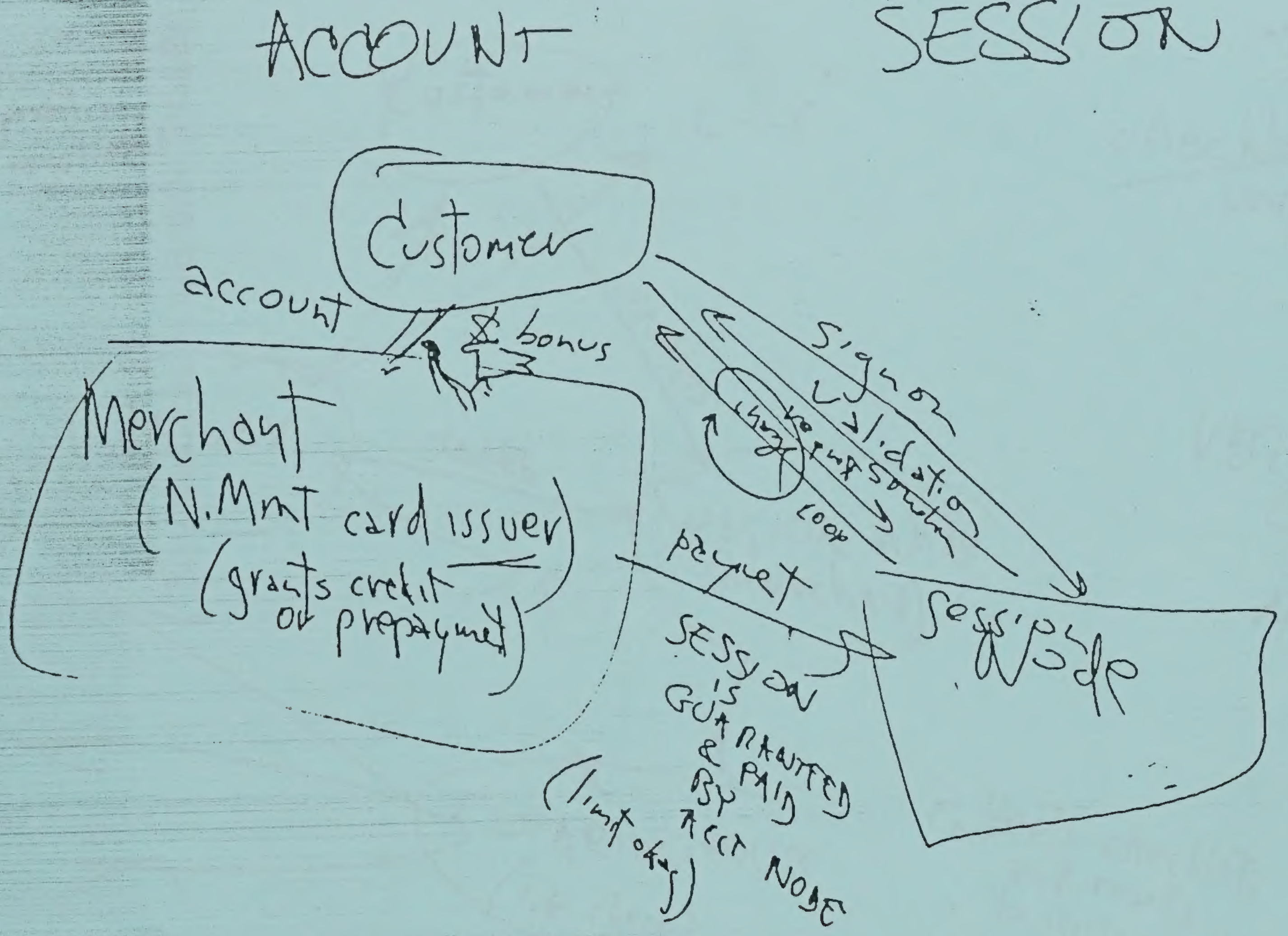
Instruments may subtract from deposit until exhausted

EXTREMELY SMALL AMOUNTS

PROPOSED
STANDARDIZATION

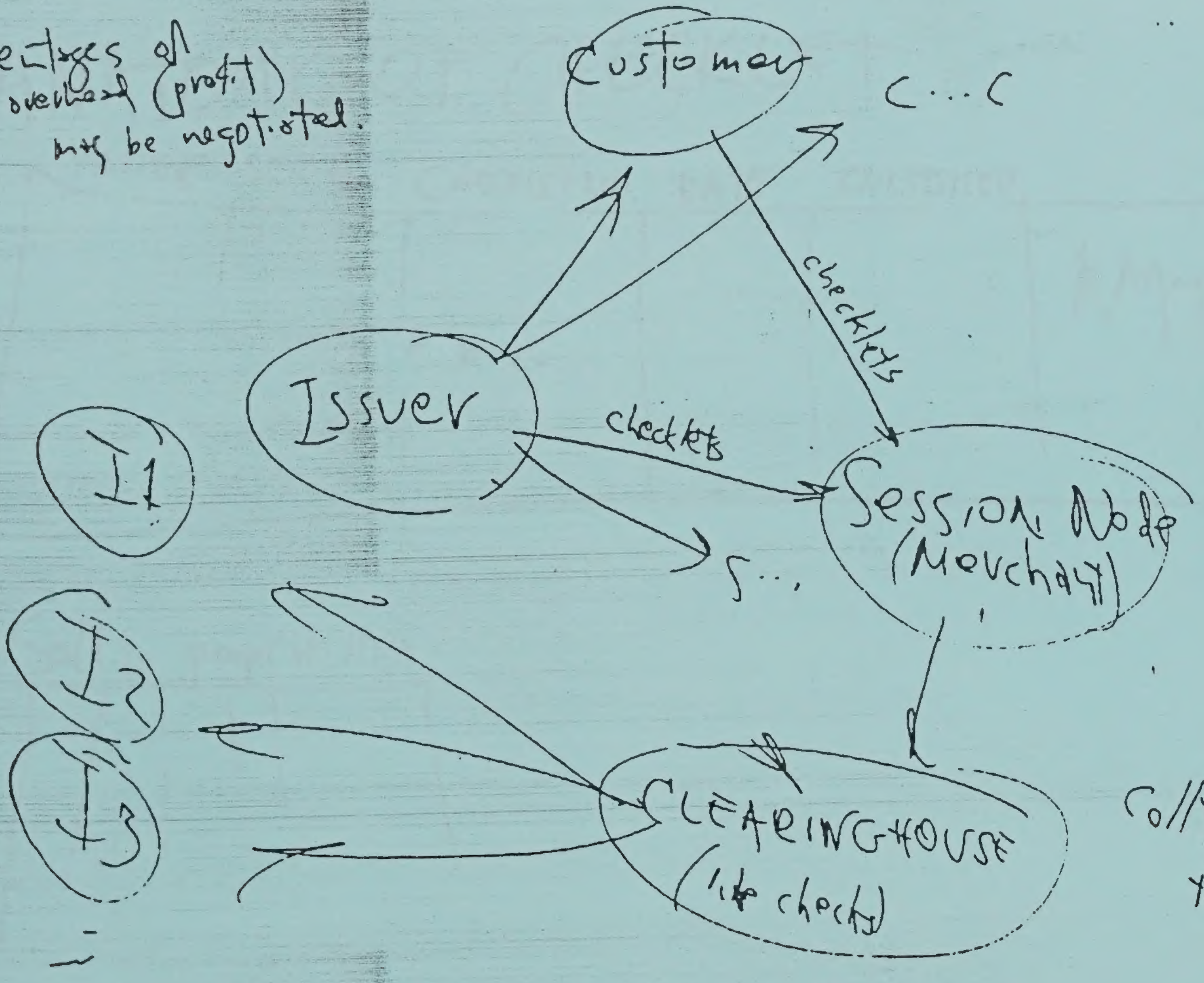

banks
credit card
N. Amt
$ v/p
potentially non participants

MTG DEC 7 1994 23


ACCOUNT
SESSION
Customer
account
$ bonus
Merchant
(N.Mnt card issuer
(grants credit
or prepaymt)
Signon
validation
loop
paymet
SESSION
IS
GUARANTEED
& PAID
BY
ACCT NODE
(limit okay)
Session Node

MB DEC 7 1994 24

Percentages of overhead (profit) may be negotiated.


Customer
C…C
Issuer
checklets
checklets
Session Node
(Merchant)
S…
I1
I2
I3
CLEARINGHOUSE
(like checks)

Collects checklets and resells to issuers

checklet (noun diminutive) ("Chiclet" chewing gum)

very very small check

denominated in nanobucks

$.000000001

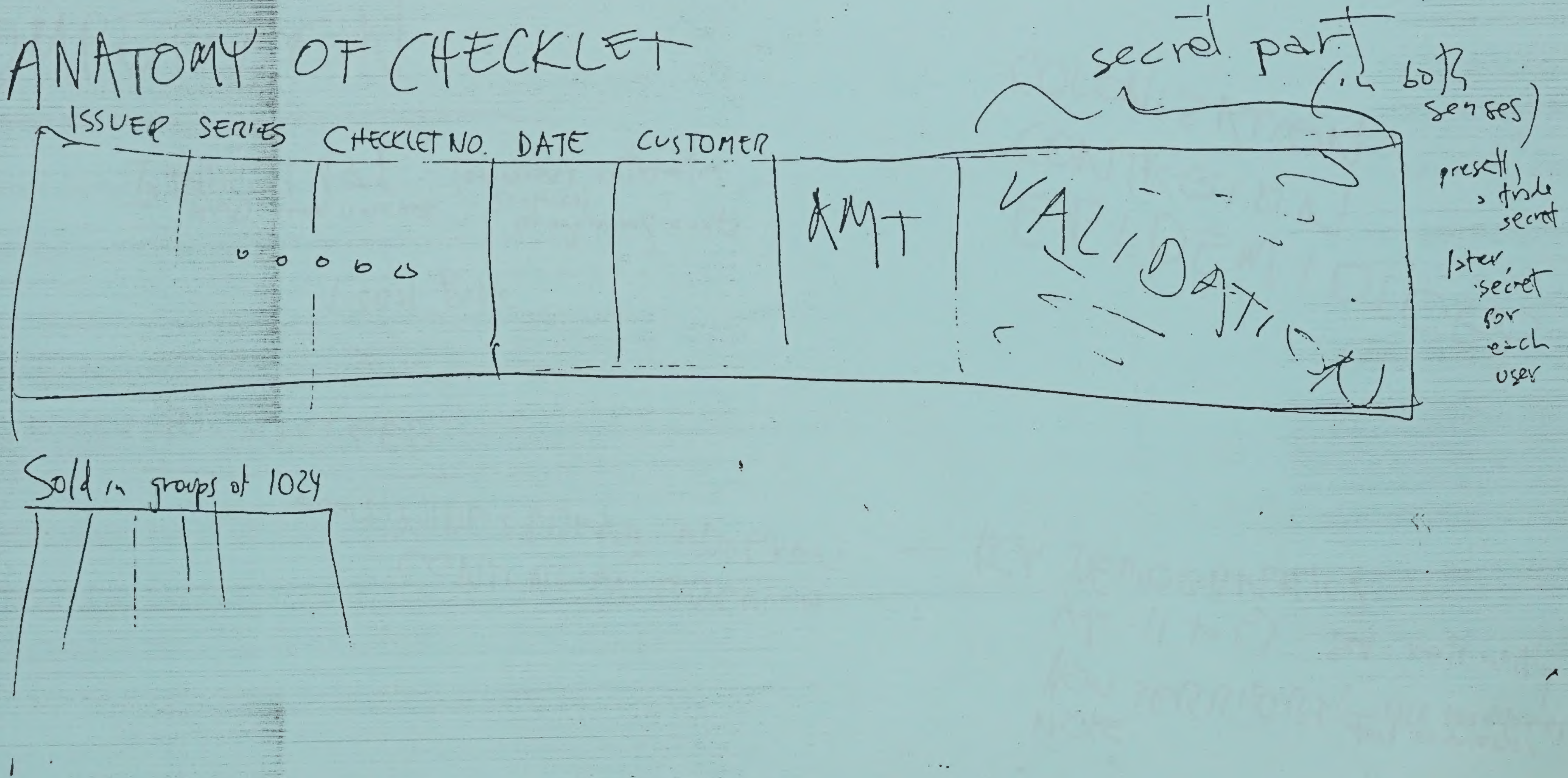
¥.000001

VERY LOW OVERHEAD for merchant

MEDIUM LOW OVERHEAD for sender

MTG DEC 7 1994 25

ANATOMY OF CHECKLET


ISSUER
SERIES
CHECKLET NO.
DATE
CUSTOMER
AMT
VALIDATION
secret part (in both senses)
presently, a trade secret
later, secret for each user
Sold in groups of 1024

MTG DEC 7 1994 26

COMPETITION

Intelligent Pad : Tomorrow's interactive graphical programming envts
APPLICATION LINKAGE

?
Visual Basic

COLONIZATION
CONTAGION
EPIDEMIOLOGY

TO SUCCEED

means: WIDESPREAD ADOPTION
CONTINUAL GROWTH

— KEY DEMOGRAPHICS
Age: 11 to 17 Sex: male mostly
NEW TERRITORY — old territories tend to be FULL
NICHE

MTG — DEC 7 1994

COMPETITION

Intelligent Pad : Tomorrow's interactive graphical programming envts
APPLICATION LINKAGE

?
Visual Basic

to SUCCEED

means: WIDESPREAD ADOPTION
CONTINUAL GROWTH

GET IT OUT!
PC
SET-TOP BOX!

MOSAIC

TRANSPUBLISHING

TO SUCCEED: STRATEGY

RECONFIGURABILITY,
PROGRAMMABILITY,
EXTENSIBILITY
NETWORK ACCESS TO EXTENSIONS
NEW LOOK

NEW LICENSE
★ logo/bugs fix licensing

MTG DEC 7 1994 28

COMPETITION

Intelligent Pad : Tomorrow's interactive graphical programming envts
APPLICATION LINKAGE
?
Visual Basic

TAOS Operating System

SMALL KERNEL
MULTITHREAD
HIGH PERFORMANCE
9

to SUCCEED

means: WIDESPREAD ADOPTION
CONTINUING GROWTH

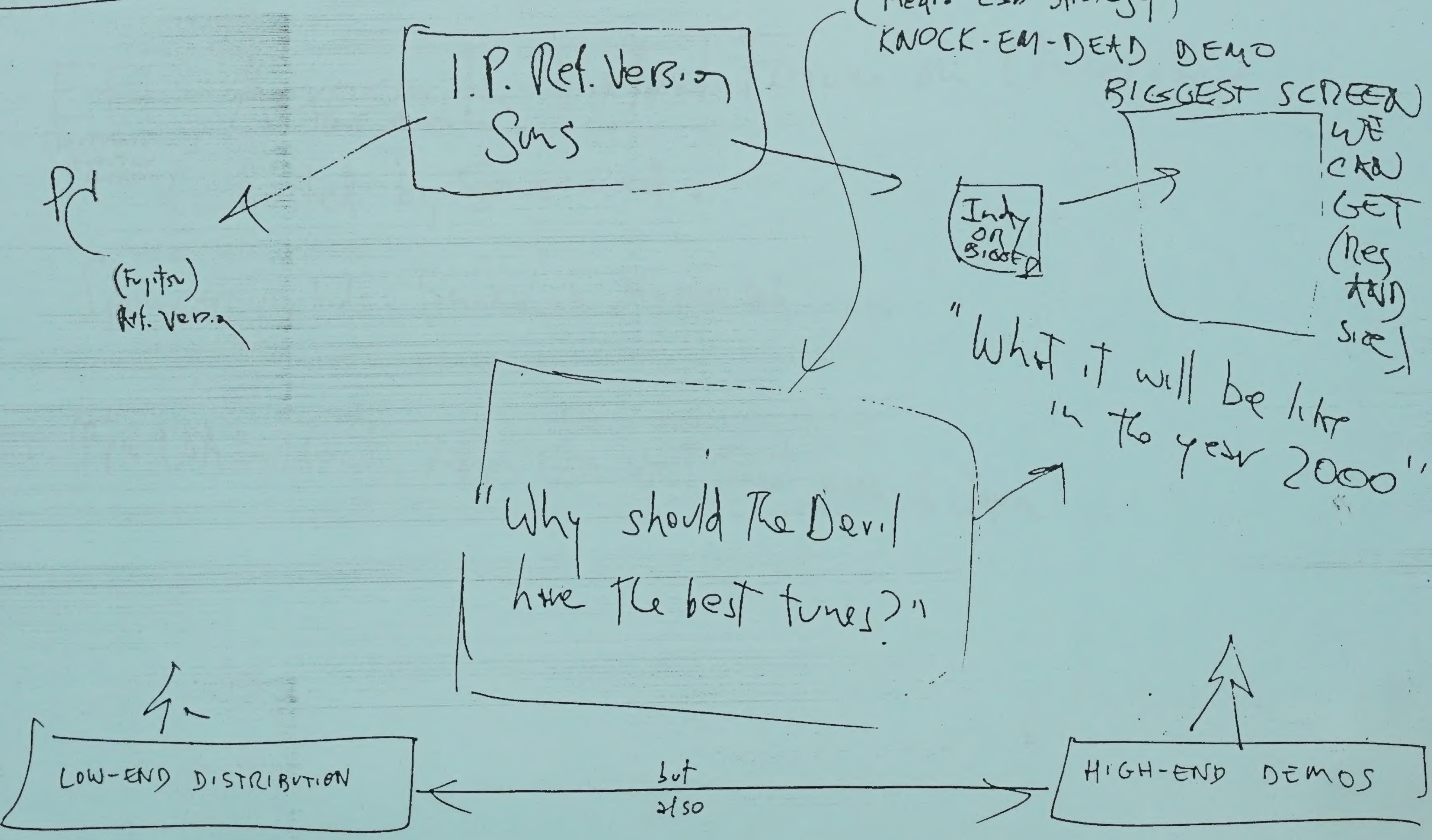
— KEY DEMOGRAPHICS
Age: 11 to 17 Sex: male mostly
NEW TERRITORY — old territories tend to be FULL
NICHE

GET IT OUT!
PC
SET-TOP BOX! Very important: Dig. HDTV + ~N MIPS chip c TAOS

MTG DEC 7 1994 29

This proposes:

DOUBLE STRATEGY:
LO & HI END


(Media Lab strategy)
KNOCK-EM-DEAD DEMO
BIGGEST SCREEN WE CAN GET (Res AND size)
I.P. Ref. Version
Suns
PC
(Fujitsu)
Ref. Version
Indy or Bigger
"What it will be like in the year 2000"
"Why should the Devil have the best tunes?"
LOW-END DISTRIBUTION
but also
HIGH-END DEMOS

MTG DEC 7 1994 30

Tomorrow's

EFF / Aerosmith Virtual Forum on Censorship

Electronic Frontier Foundation

Rock musicians

hosted by Sensemedia.

Sponsors include: TanakaLab, HyperLab

10-11 pm USA East Coast, 7-8 pm USA West Coast, noon-1 Japan.

MG DEC 9 1994 Ø

Discussions between TN & Mr. Yutaka Karasawa,
Hyper Consultant.
(Not on videotape)

1 TN's parallel universe
2 versus other software traditions
4 Transclusion the center; TRANSCOPYRIGHT NOTICE Trans© 1994
MORE ON TRANSCLUSION...
8 Xanadu; the two fine-grain servers
9 PLANS AT THE LABS: client
10 Tatsuno Otoshigo & Structure
12 PUBLIC-KEY CRYPTOSYSTEMS

DISCUSSION AMONG YT, TN, J. CHEUCK, M. MALLICOAT
about possible Free Distribution of IP,
esp. to Teenagers for Game Construction,
Hypermedia.

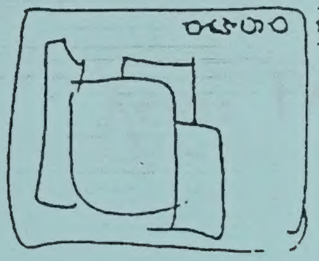
14 CURRENT VERSIONS OF INTELLIGENTPAD
15 Vidgame & Hypermedia considerations.

MTG DEC 9 1994 1

TED'S PARALLEL UNIVERSE

~~INTERFACES~~

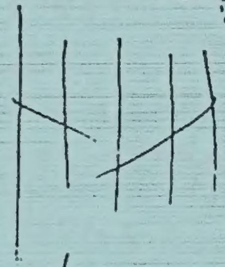
Conventional software



} icons

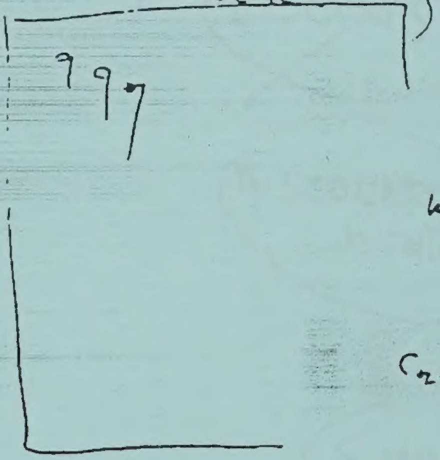
invisible stuff complicating to learn

TN: PARALLEL STRUCTURES



links & transclusions DIFFERENT

ZOOMABLE OVERVIEWS



Arbitrary control → set of predetermined functions

"Interface"

VIRTUALITY → REALITY

FEEL CONSTRAINING STRUCTURE

nuts & bolts ironic & coarse transistors

Atmosphere Humor Suspense Sense of love & friendship

Script Plot characters

(How it was done)

DETAILING

HANDLING LOOK SMELL

Feedback Stop, start Viewpoint shifts

Design classes …

Cn

SW

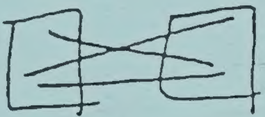
DETACHABLE UNITS

Tuning Scrolling

DETAILING

MTG DEC 9 1994 2

TN, 1960+ VIRTUALITY DESIGN

1967  scrolling windows with CONNECTABLE CONTENTS

Mauchly et al, 1945 hierarchical files (inexpedient)

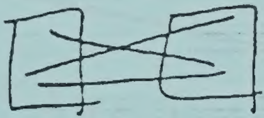
Xerox PARC non-connected windows
Icons
"metaphor" design

Brown University, 1968 WYSIWYG wordprocessing
= COMPUTER AS PAPER SIMULATOR!

FILES
METAPHORS
ICONS
DISCONNECTED WINDOWS
SIMULATION OF PAPER

MTG DEC 9 1994 3

TN, 1960+ VIRTUALITY DESIGN ~~FILES~~

1967  scrolling windows with CONNECTABLE CONTENTS ~~METAPHORS~~

"Computer Basics" = "What God intended"

Mauchly et al, 1945 hierarchical files (inexpedient) ~~ICONS~~

Xerox PARC non-connected windows ~~DISCONNECTED WINDOWS~~

icons

"metaphor" design

Brown University, 1968 WYSIWYG word processing

= COMPUTER AS PAPER SIMULATOR!

SIMULATION OF PAPER

MTG DEC 9 1994

5

Personal computs

Interactive Software

Interactive Media

Transclusion

Transcopyright

Re-Use of copyrighted material

Network Publishing

Grants license

claims copyright

Trans© 1994 Y. Kasasawa

claims rights world-wide

license includes

MJG DEC 9 1994

TRANSCLUSION

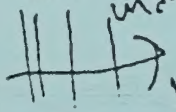
Small scale: managing
local
electronic documents

Large scale: publishing with
AUTOMATIC ROYALTY,
FREE QUOTATION

MTG DEC 9 1994

TRANSCLUSION

Small scale: managing LOCAL electronic documents


Version
management
&
boilerplate

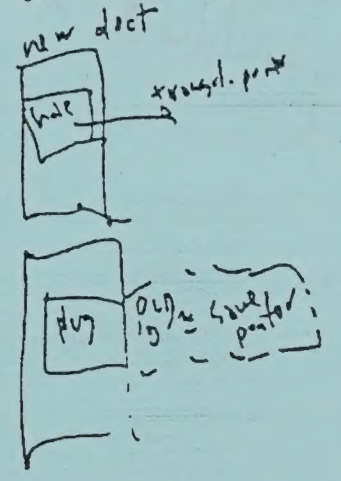
Large scale: publishing with
AUTOMATIC ROYALTY,
FREE QUOTATION

GRANT
OF
LIMITED LICENSE
TO RE-USE
IN NEW CONTEXT
BY POINTER
SALE OF COPY
WITH
RECEIPT

def.

RE-USE with VIRTUAL INCLUSION, ALL PIECES RETAIN ORIGINAL IDENTITY (and can have new identities)
with copying under certain circumstances

Pointer form:

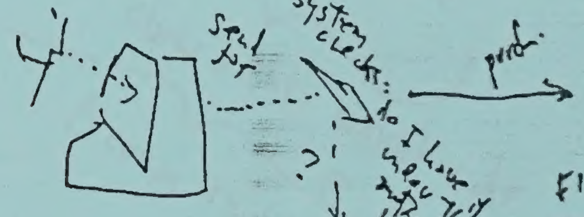

new doc't
hole
transcl. ptr
plug
OLD ID = save pointer

Fulfilled form

} ALL ON SINGLE NODE

} Client or multiple nodes

CLIENT
BROWSER


Send for
System checks:
do I have
specific
[illegible]
[illegible]
pmt.
FINE-GRAIN PAYMENT

n$ ≈ .00001¥

(to be implemented as SW is changed)

MTG DEC 9 1994 #4

Personal computing

Interactive Software

Interactive Media

Transclusion

Transcopyright

Re-Use of copyrighted material

Network Publishing

Trans© 1994 Y. Kasagawa

claims rights world-wide &

license includes

MTG DEC 9 1994 8

"XANADU" is now TN's trademark ® USA

PREVIOUS XANADU SOFTWARE, FINANCED BY AUTODESK:

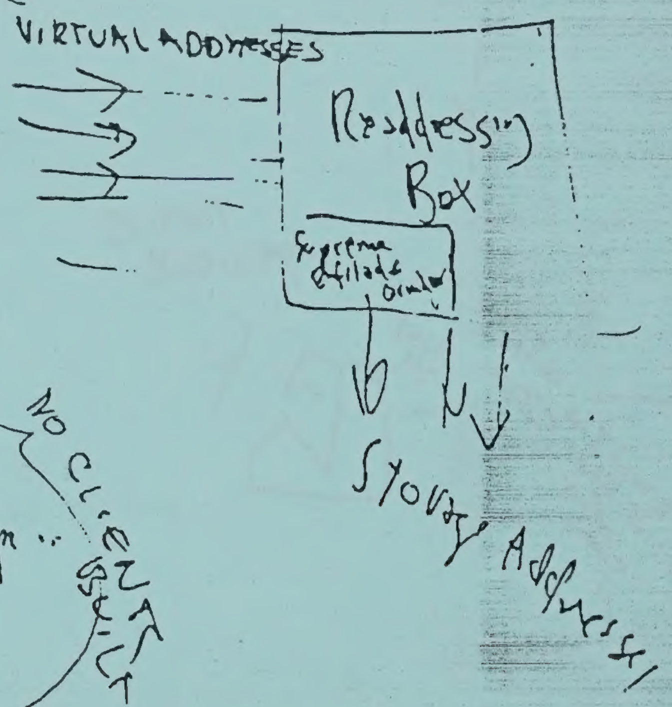
TWO FINE-GRAIN TRANSCLUSIONARY NETWORK SERVERS:

2 different conceptual shells of structure system

88.1 (described in *Literary Machines*)
(completed but not tested) Tumbler addressing, spans

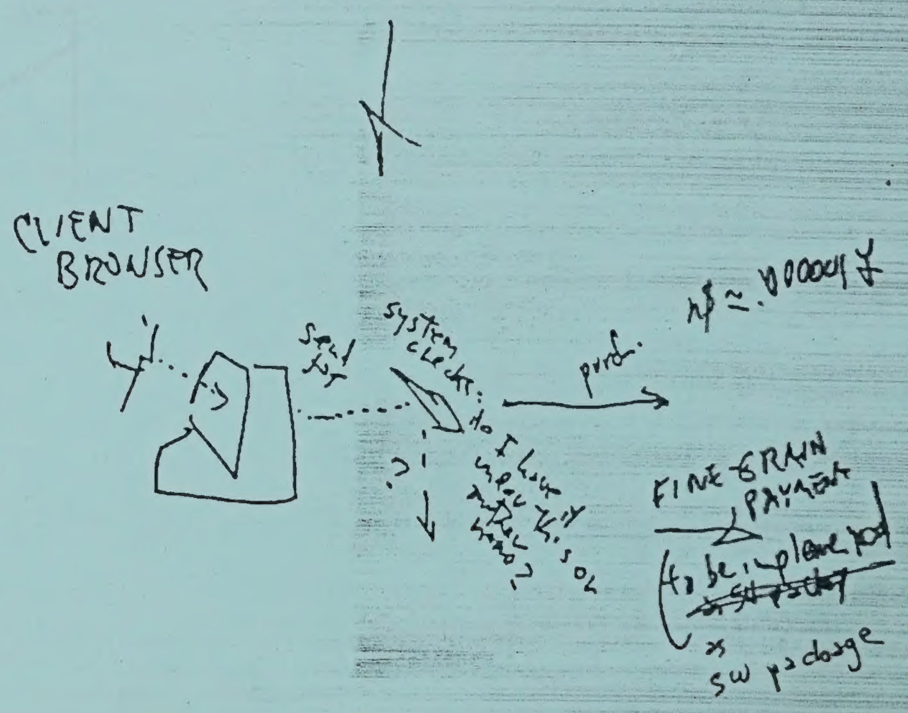
XOC SERVER (not completed)
works, versions, security clubs, time stamps ..
Quark-level building blocks

NO CLIENT BUILT


VIRTUAL ADDRESSES
Readdressing Box
Supreme Enfilade Ordinal
Storage Addresses!

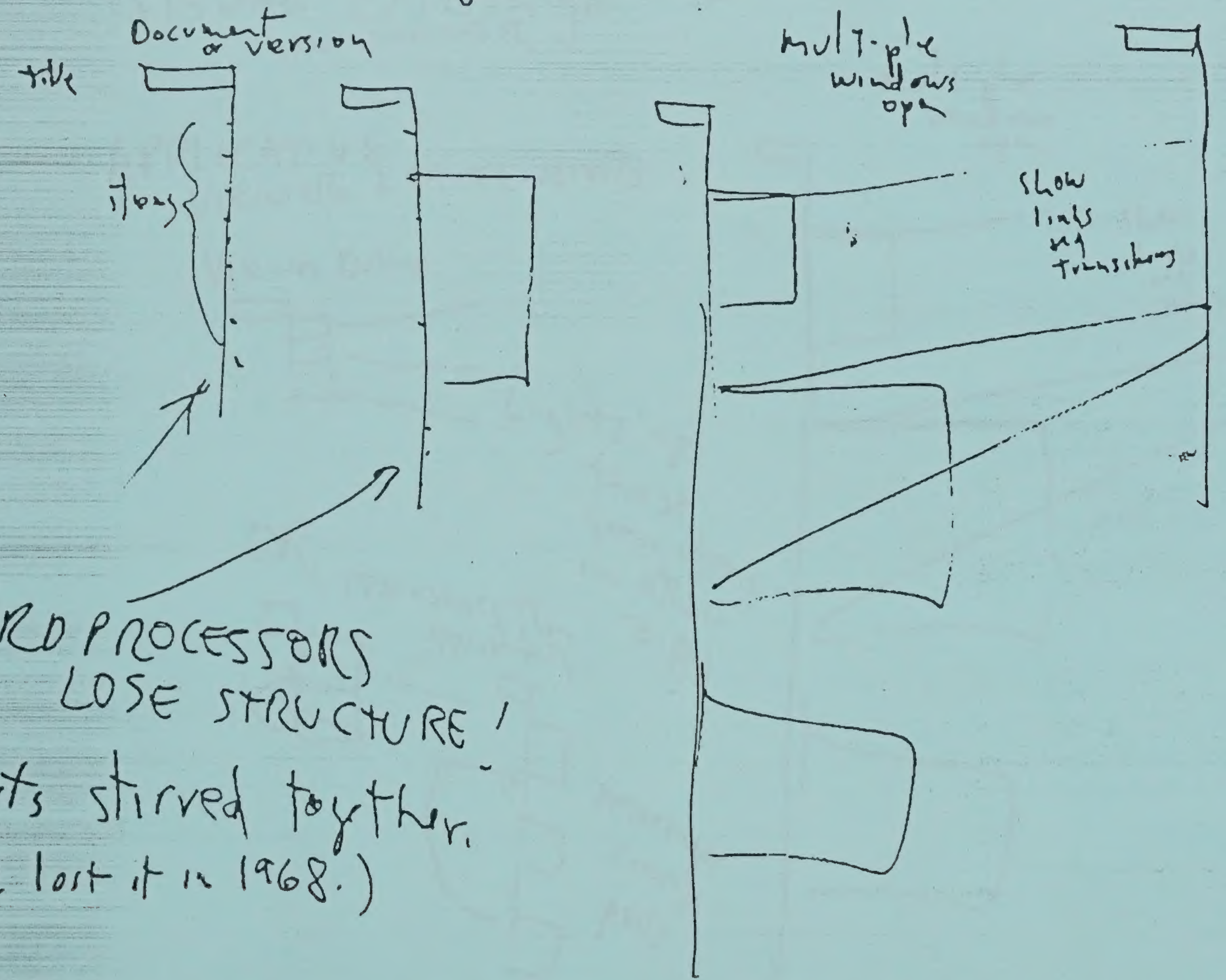
PLANS AT THE CMB-

IP-BASED


CLIENT BROWSER
Send for
system checks:
do I have
[illegible]
is ok
?
prod.
n$ ≈ .00001 ¥
FINE GRAIN PAYMENT
to be implemented
~~as SW package~~
as SW package

MDG DEC 9 1994

"Tatsuno Otoshigo"


Document or version
title
items
multiple windows open
show links and transclusions

WORD PROCESSORS
LOSE STRUCTURE!

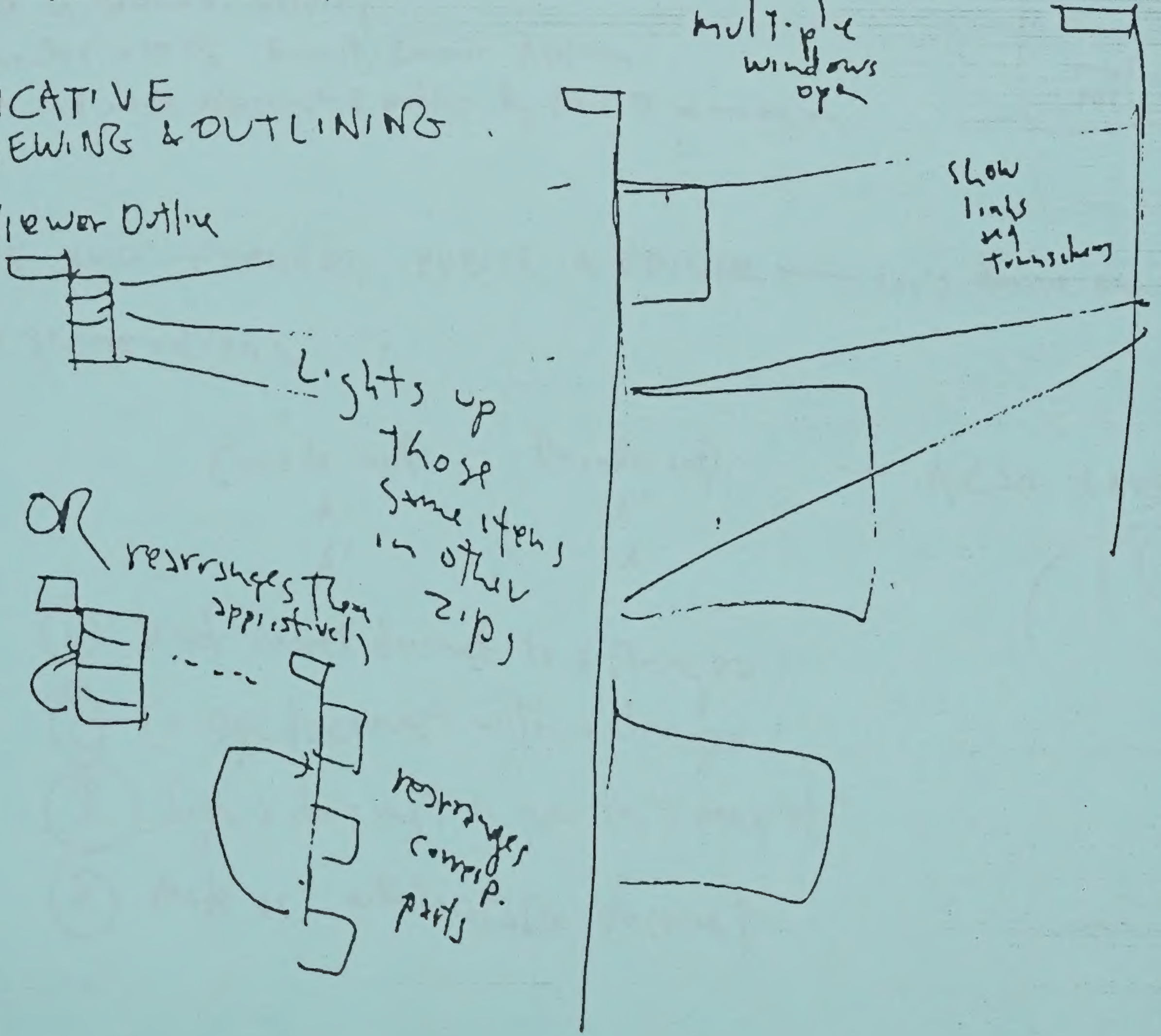
Parts stirred together.
(We lost it in 1968.)

THESE VIEWS SHOW
STRUCTURE
(items & Their
multiple uses
& evolution)
sequence
connection

MB DEC 9 1994 11

"Tatsuno Otoshigo" ≡ structure from TN's 1965 article
new visualization

APPLICATIVE
VIEWING & OUTLINING.

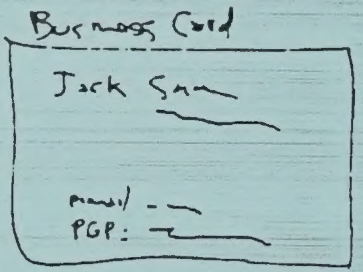

multiple
windows
open
Viewer Outline
show
links
and
transclusions
Lights up
those
same items
in other
zips
OR rearranges them
applicatively
rearranges
corresp.
parts

THESE VIEWS SHOW
STRUCTURE
(items & their
multiple uses
& evolution)
sequence
connection

MTG DEC 9 1994

PUBLIC-KEY CRYPTOSYSTEMS

Proposed by Hellman? Diffie?
Implemented ~1975 Rivest, Shamir Adelman
Stolen and made efficient & public by Phil Zimmerman



YOU HAVE TWO CYPHERS, PUBLIC & PRIVATE — can't derive one from the other

THEY ARE SYMMETRICAL

Encode with	Decode with
A	A'
A'	A

— ALSO LAYERABLE

$(((\ )_A)_B)_C$

① Send secret document to a stranger
② Co-sign document with a stranger
③ Sign a document so you can't deny it
④ Make an authenticatable document

MTG DEC 9 1994 13

MTG : YT, TN, John Chouck.

MTG DEC 9 1994 /4.

IP.

NON COMMERCIAL

	STATUS	PAPS	VIDEO/MM	EXPOSURE
① EVALUATION. Version INTERVIEWS/CH	V.0.95		N	JAPAN 100+ US 15 [illegible]
② ST-80 VERSION RESEARCH	STABLE. 3yrs ago.	450	Y/N	LID/[illegible]
③ ST-80 (MACINTOSH). RESEARCH	STABLE	450.	Y/N	LID'
④ SMALLTALK AGENTS (MAC), RESEARCH QKS	STABLE	50.	Y	LID.

COMMERCIAL

	STATUS	PAD	ENG	VIDEO/MM.
HSW				
OPEN INTERFACE (MAC)	β	5	NO	
HP	α	?	NO	
MAC	PRODUCT.	40	NO	YES
WINDOWS	OEM	40	NO	
FUJITSU				
WINDOWS	PRODUCT	40	YES	YES
SUN	α	?	YES.	
MAC	OEM	40	YES	

MTG DEC 9 · 1994 15

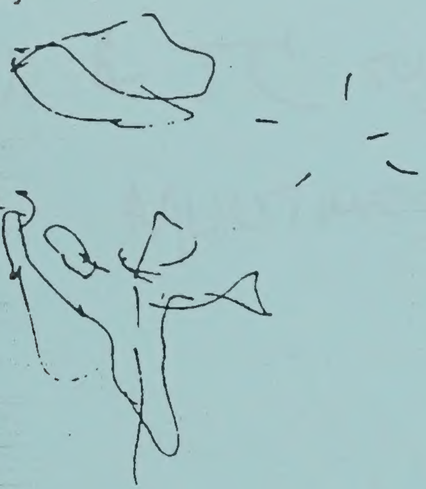
WHAT WILL WE NEED FOR
VIDEO GAMES?

[illegible]
MAKE THAT ME NEED YOU

[illegible] 12

MTG DEC 9 1994 16

SIMPLE
VIDUS~~MAS~~/Explosions



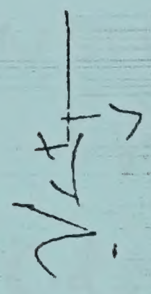
Figures

SOUND

MAPS OF GAME
Backdrops
Props

Interaction trigger~~s~~
Software

Scenarios
& scoring



Name it something like
KAPOW /
SNARF ...
ADD YOUR OWN GRAPHICS
ADD YOUR OWN AUDIO

Upgrades:
Dimensionality
Sound
Graphical Richness

MRG DEC 9 1994 17

MM & JC suggest
MULTIMEDIA CONSTRUCTION KIT
using I.PAD —
for Kid's & Others.

T. That's always been part of the Vidgame idea...

MTG 95.4.29

| Yt, TN, Hidaka (later).

1 What demos of Zip Editor will have the most impact?

2 DESIGN OF INTERFACE DETAILS for Zip Editor.
slots, message arguments.

13 GEOMETRY LIST of GEOMETRY EVENT DETECTION.

---

17 SET-UPDATE SEQUENCE IN DETAIL.

22 FINAL FULL DIAGRAM!

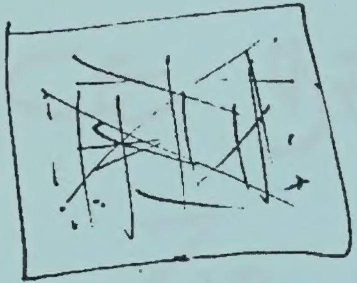
MTG APR 29 1995 1

ZIPEDITOR IMPACT from:

① Grand View

But map generated from data?

Each item a pad?



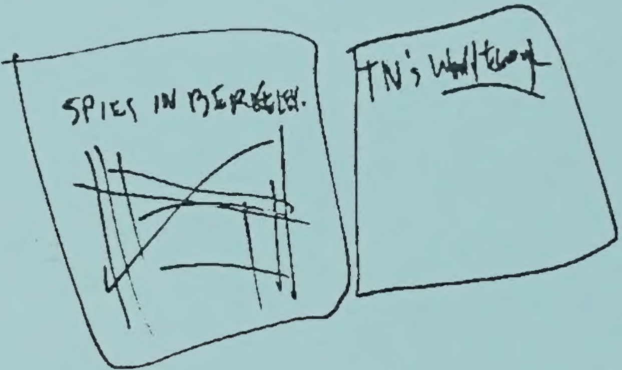
many many points

NOT NECESSARILY THIS YEAR?

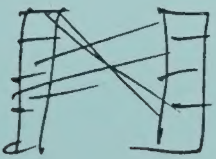
AYT: these are 'placeholders,' ≤1k, so many can be resident.

INSTANCE VARIABLE: item filename.

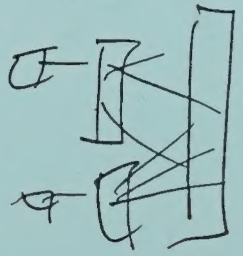
② SEEING SOME REAL DATA DOMAIN.



③ HYPERARCHICAL STRUCTURES



Transclusive Reorg

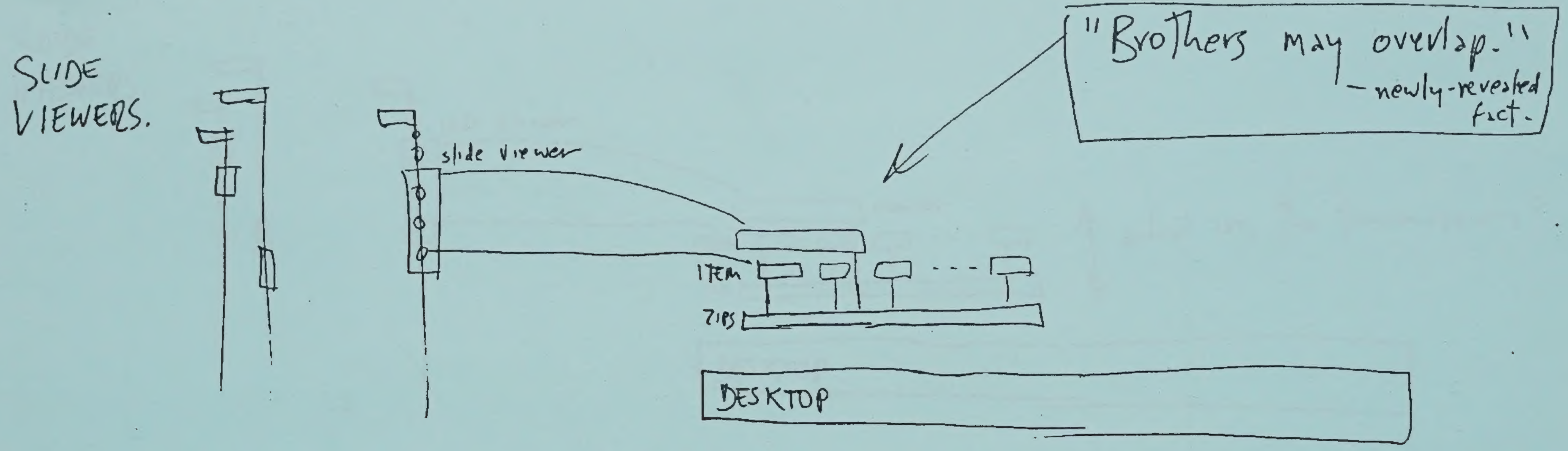


More than one outline.

MTG APR 2 9 1995 2

DESIGN OF
INTERFACE DETAILS
for our Zip Editor.

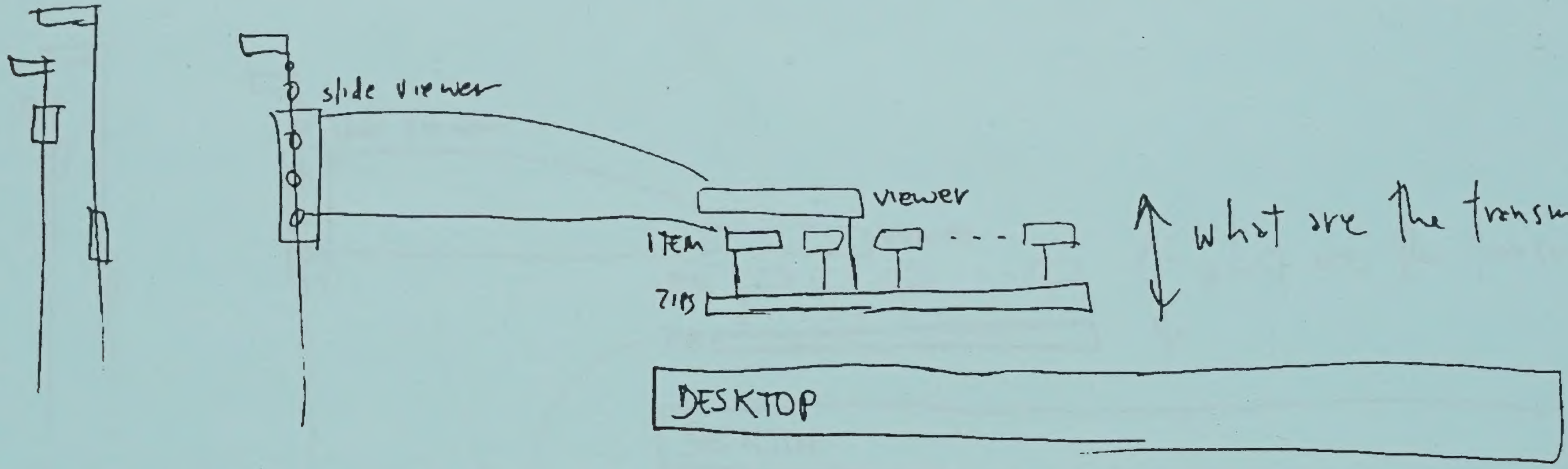
APR 2 9 1995


SLIDE VIEWERS.
slide viewer
ITEM
ZIPS
DESKTOP

"Brothers may overlap." — newly-revealed fact.

MTF APR 2 9 1995

SLIDE VIEWERS.

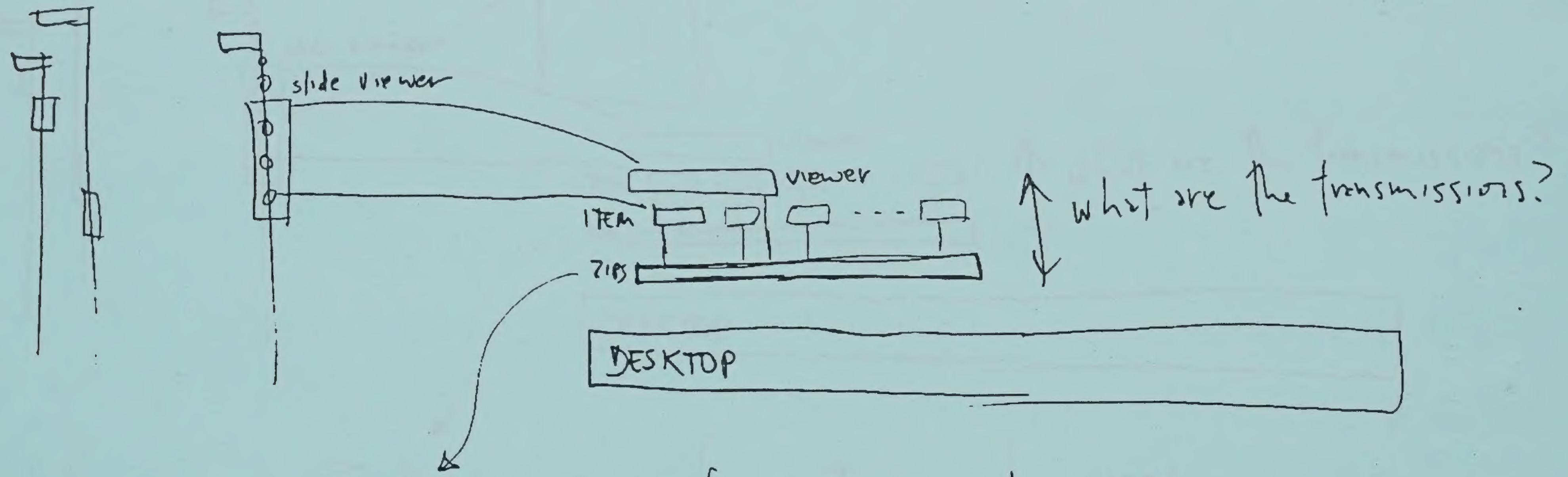

slide viewer
viewer
ITEM
ZIPS
. . .
DESKTOP

what are the transmissions?

MTG APR 2 9 1995

5

SLIDE VIEWERS.


slide viewer
viewer
ITEM
ZIPS
what are the transmissions?
DESKTOP

ZipPad Slots :

	set	gimme
itemList	(add 'file name') add (delete 'file name') delete	↑ position
viewer	write the corresponding files	read the files of covered items and generate a composite editable pad.

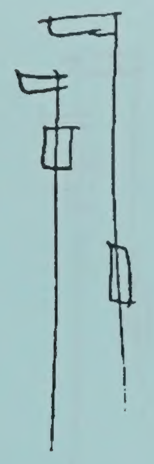
APR 2 9 1995

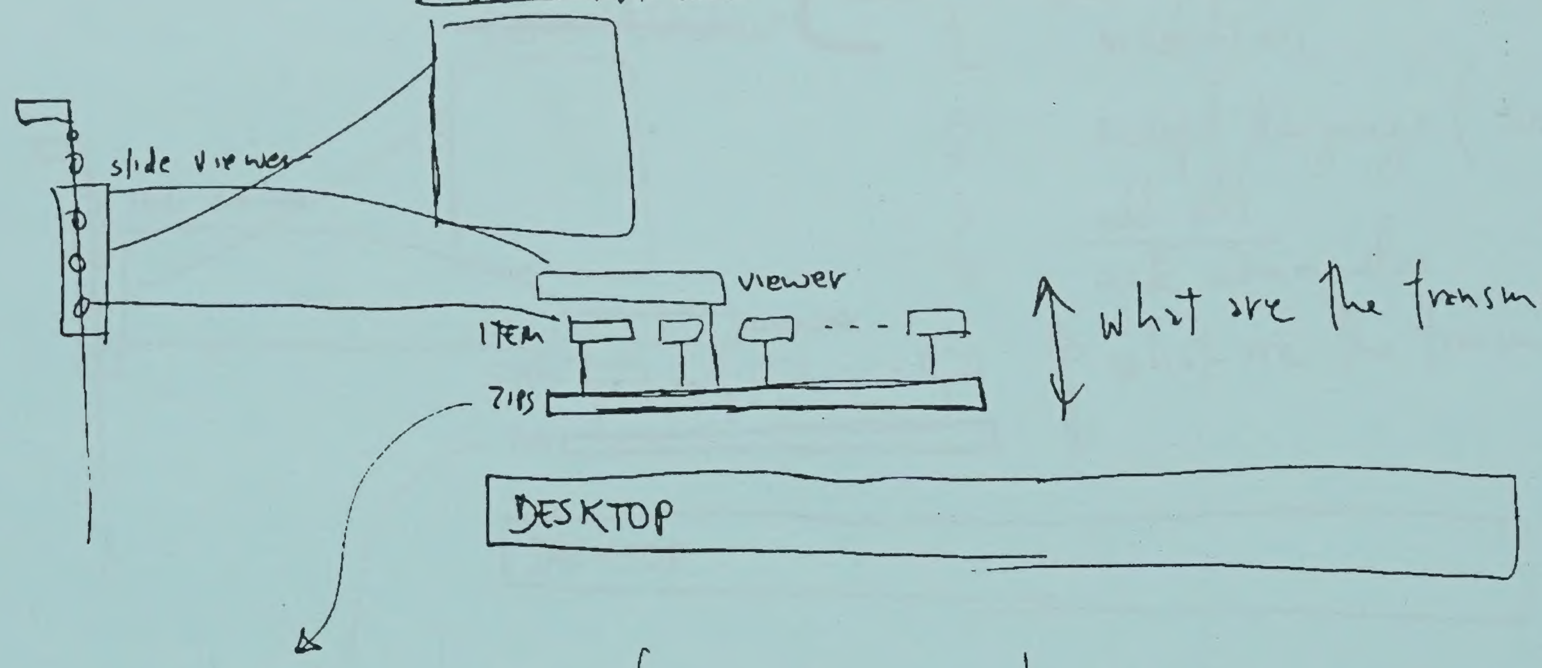
6

Sliding Viewer

~~Lens Window~~

SLIDE VIEWERS.




slide viewer
viewer
ITEM
zips
DESKTOP

what are the transmissions?

ZipPad

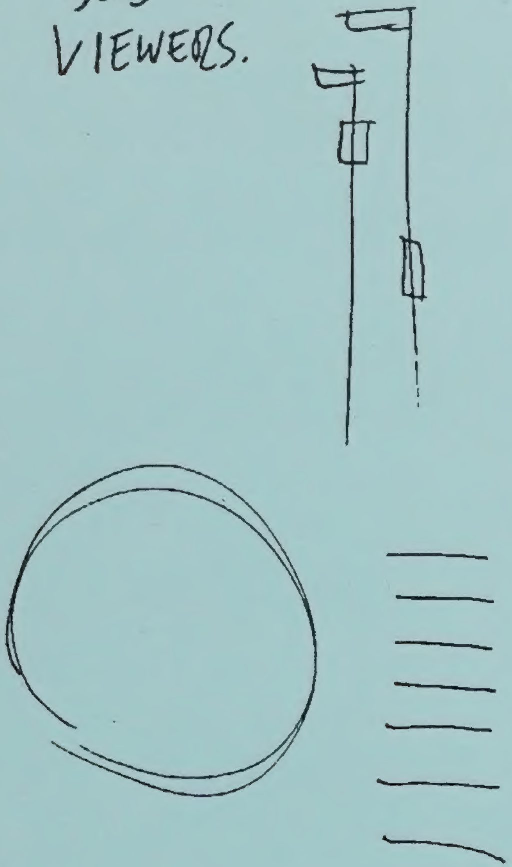
Slots :

	set	gimme
itemList	(add 'file name') add (delete 'file name') delete	↑ position
viewer	write the corresponding files	read the files of covered items and generate a composite editable pad.

MTG APR 29 1995

7

SLIDE VIEWERS.

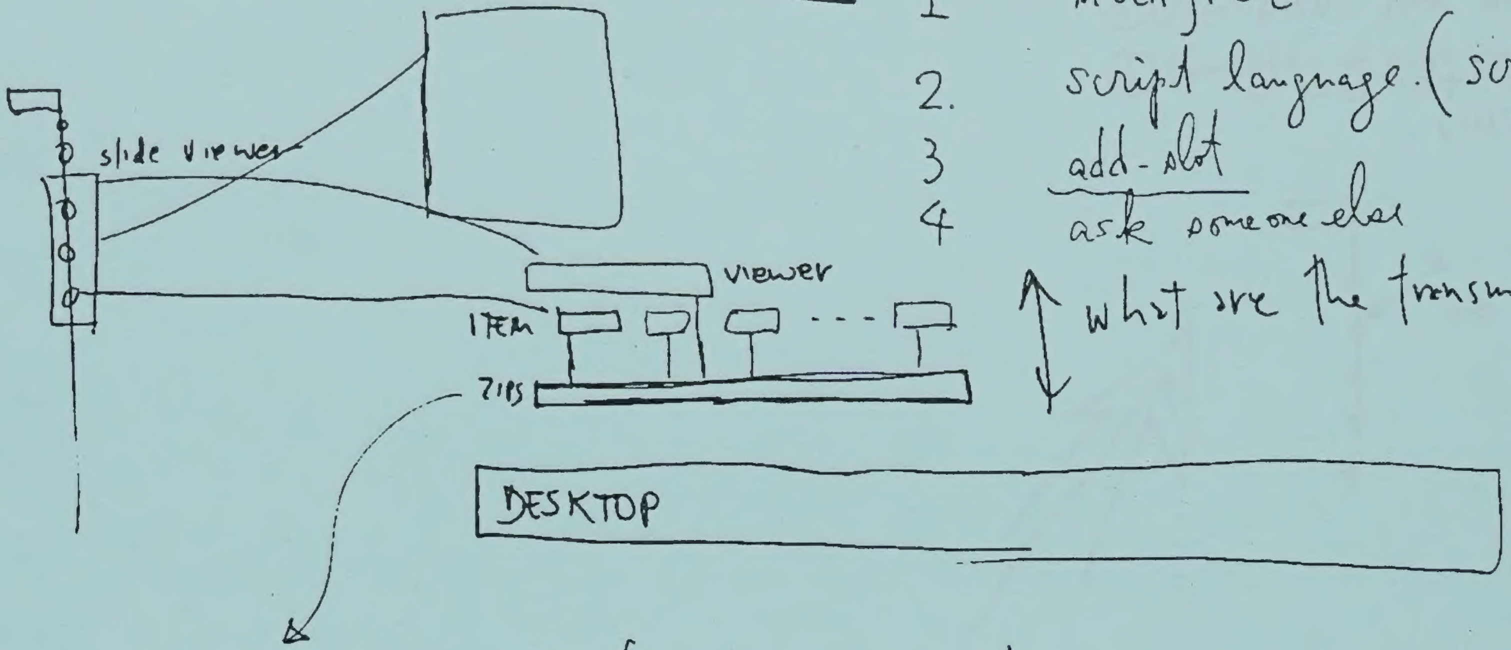


Sliding Viewer
~~Lens Window~~

HOW CHANGE A PAD?

1 modifier
2. script language. (script modifier).
3 add-slot
4 ask someone else

what are the transmissions?



ZipPad

Slots :

	set	gimme
itemList	(add 'file name') add (delete 'file name') delete	↑ position
viewer	write the corresponding files	read the files of covered items and generate a composite editable pad.

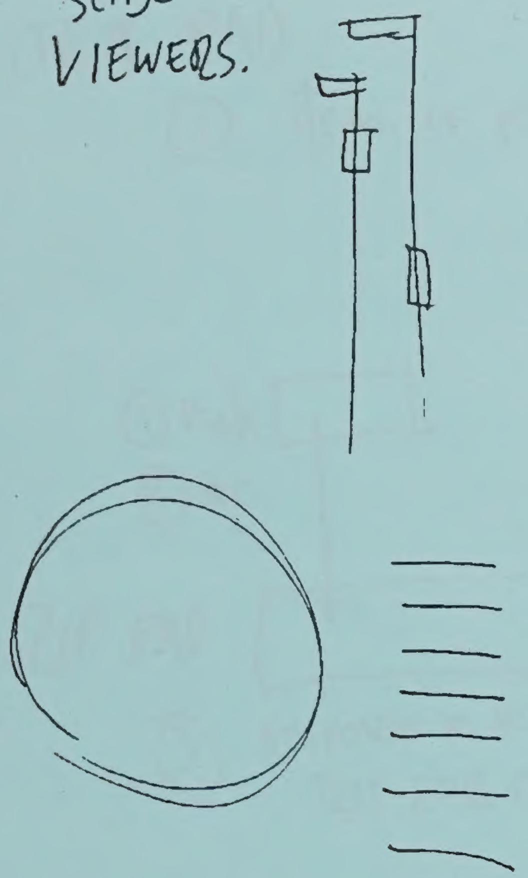
MTG APR 2 9 1995 8

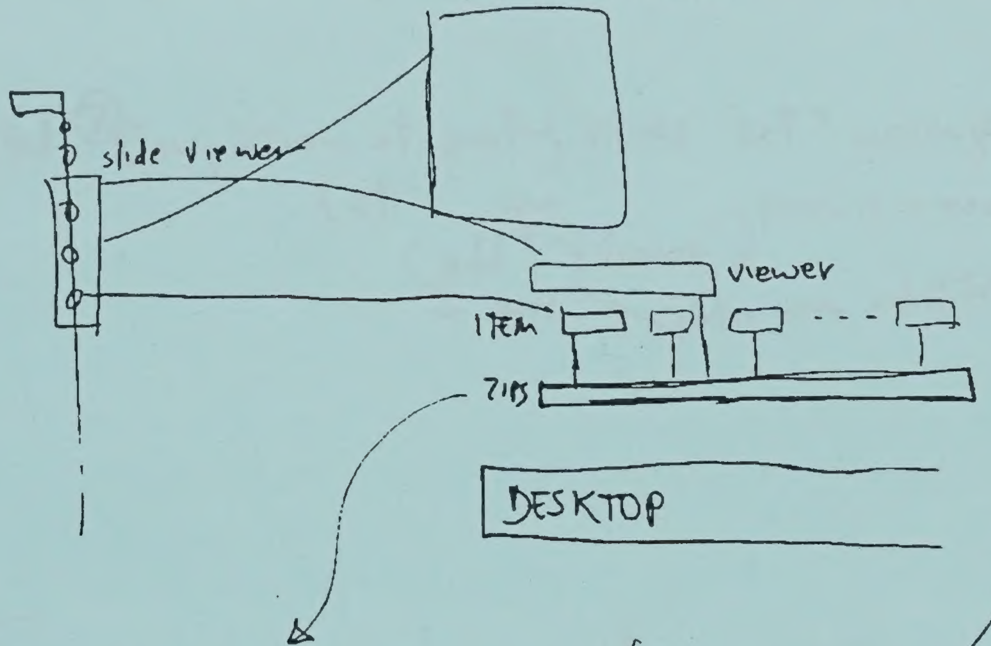
Sliding Viewer

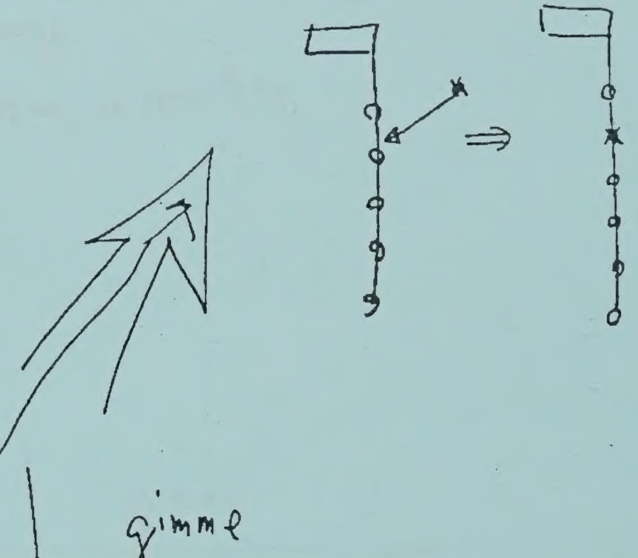
~~Lens Window~~

OBJECTIVE: TO INSERT FILENAME IN ZIP
① User pastes item. NO CONNECTION SHEET.
② Completion of paste causes item pad to send 'set' message. (add 'filename')

SLIDE VIEWERS.




slide viewer
viewer
ITEM
ZIPS
DESKTOP
ZipPad Slot



	Set		gimme
itemList slot	(add 'file name')	add	↑ position
	(delete 'file name')	delete	
viewer slot	write the corresponding files		read the files of covered items and generate a composite editable pad.

MTG APR 29 1995 9

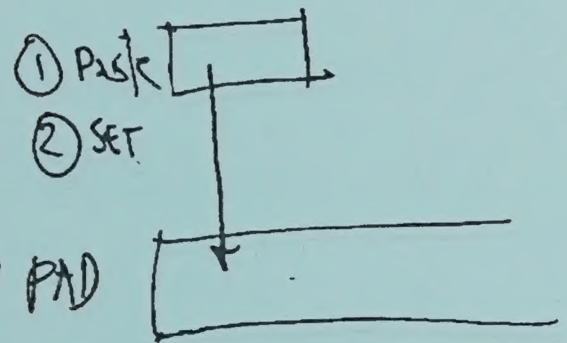
ITEM PAD

① item is pasted. ② Completion of pasting issues "set" message:

Lst

(add "filename") paren is in message.

space — no space — quotes mean substitution of specifics



ZIP PAD

③ RESPONSE TO SET ROUTINE = TEST FOR CHA

	set	gimme
itemlist slot	(add 'file name') add (delete 'file name') delete	↑ position
viewer slot	write the corresponding files	read the files of covered items and generate a composite editable pad.

Tempyoh

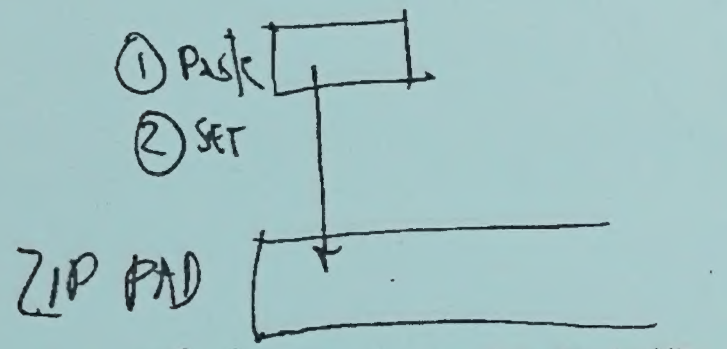
MTG APR 29 1995 10

YT:

ITEM PAD (00) MOUSEDOWN DELETES ITEM! [optimize later]
(0) MOUSEUP INSERTS ITEM!

① item is pasted. ② Completion of pasting issues "set" message:

Lst
(add + "filename") paren is in message.
space
no space
quotes mean substitution of specifics



③ RESPONSE TO SET ROUTINE = TEST FOR CHA

	set	gimme
itemList slot	(add 'file name') add (delete 'file name') delete	↑ position
viewer slot	write the corresponding files	read the files of covered items and generate a composite editable pad.

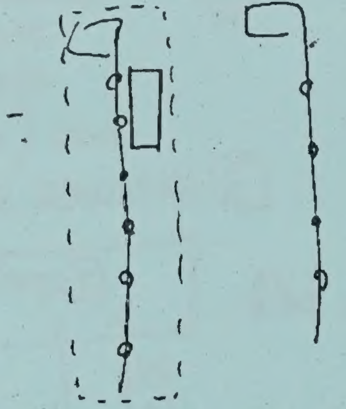
Tempyoh

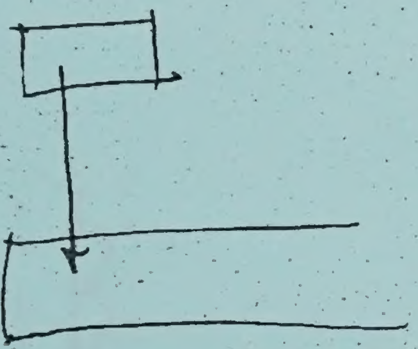
MNC APR 2 9 1995 11

ITEM PAD

① MOUSEDOWN DELETES ITEM, sends SET wix
(delete "filename")

② Mouseup (Completion of pasting) issues "set" message:
List
(add "filename") paren is in message.
space (above "add"), no space (below), quotes mean substitution of specifics





ZIP PAD

RESPONSE TO SET ROUTINE =
case (add, delete)
add: [adds filename]
delete: [deletes filename]

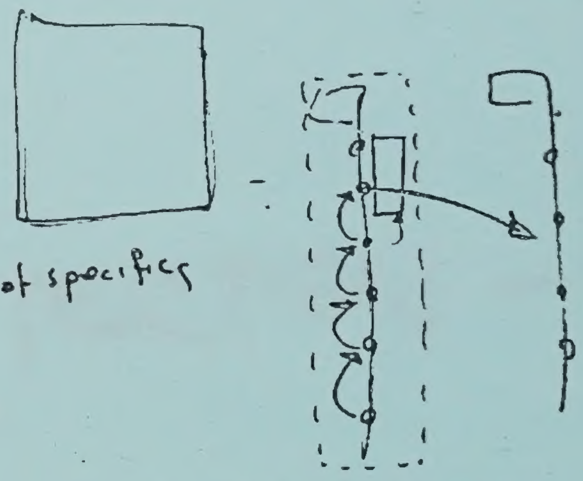
	set	gimme
itemList slot	(add 'file name') add (delete 'file name') delete	↑ position
viewer slot	write the corresponding files	read the files of covered items and generate a composite editable pad.

MVG APR 2 9 1995

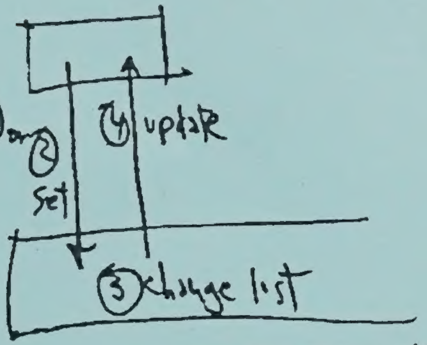
ITEM PAD

① MOUSEDOWN DELETES ITEM, sends SET wix
(delete "filename")

② Mouseup (Completion of pasting) issues "set" message:
list
(add space "filename") paren is in message.
no space
quotes mean substitution of specifics



ZIP PAD



③ RESPONSE TO SET ROUTINE =
case (add, delete)
add: [adds filename]
delete: [deletes filename]

④ UPDATE [VIEW]

	set	gimme
itemlist slot	(add 'file name') add (delete 'file name') delete	↑ position
viewer slot	write the corresponding files	read the files of covered items and generate a composite editable pad.

MB APR 29 1995

13

GEOMETRY LIST

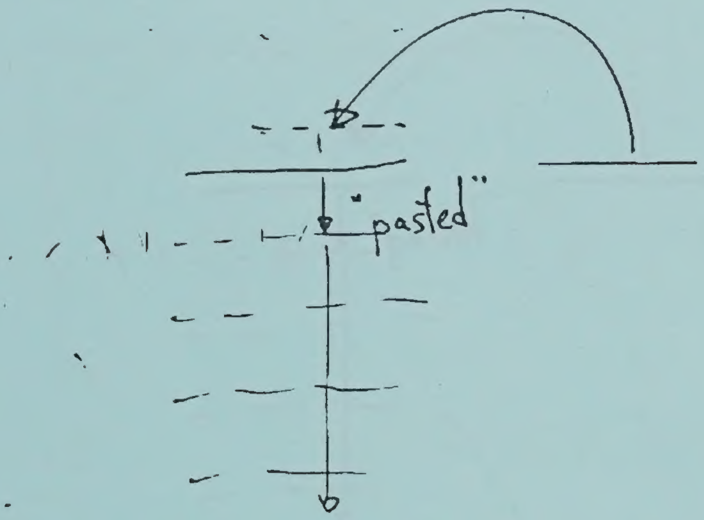
GEOMETRY EVENT DETECTION –

MTF APR 29 1995 /14

EACH PAD CONTAINS GEOMETRICAL RELATIONS OF PADS ON TOP! · Managed by kernel. Triggered by paste & peel.

Also: BROTHERS MAY OVERLAP!
(from p.3.)

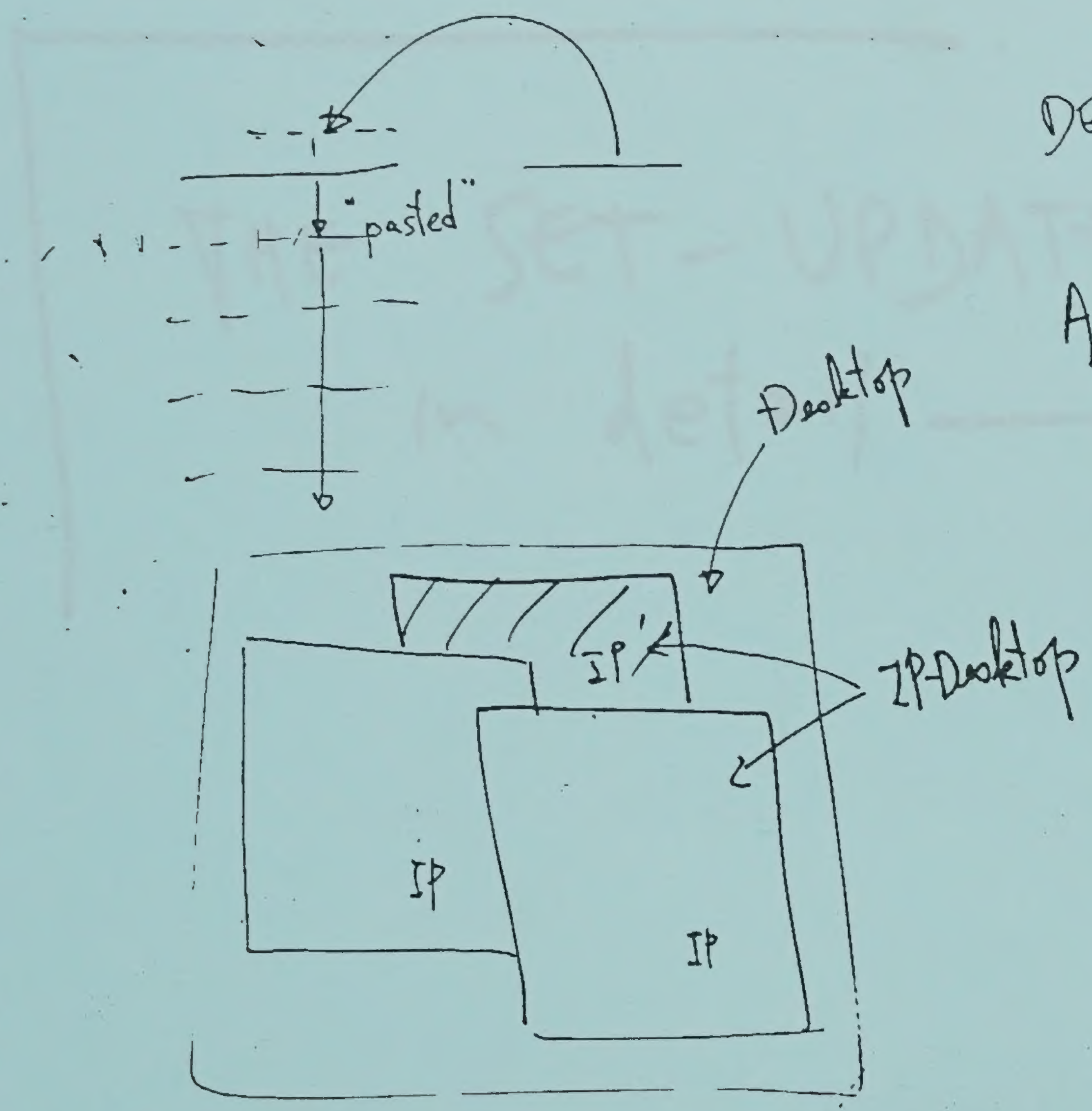
MTG APR 2 9 1995



DETECTION OF PASTING EVENT
goes clear through to the desktop.

Also: PEEL
RESIZE
& others.

MTE APR 29 1995


"pasted"
Desktop
IP-Desktop
IP'
IP
IP

DETECTION OF PASTING EVENT
goes clear Through to the desktop.

Also: PEEL
RESIZE
& others.

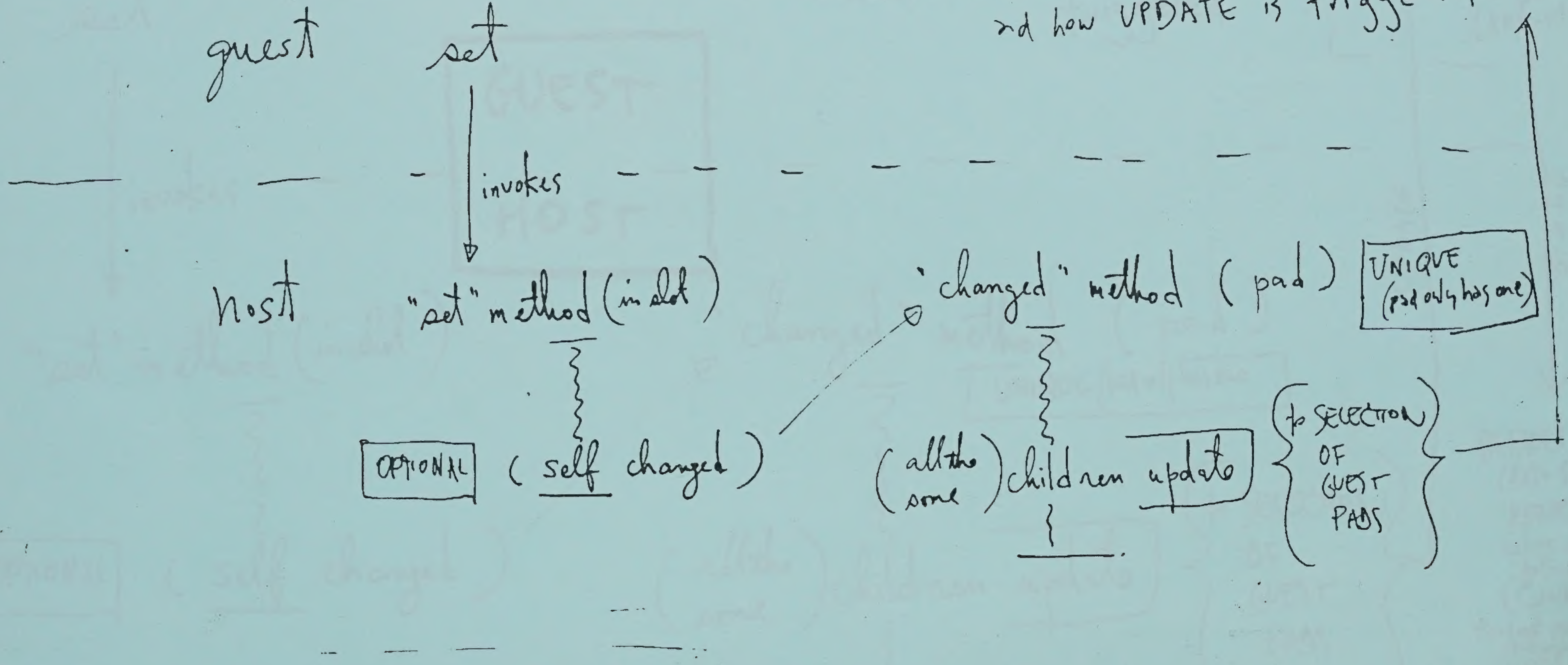
MTG APR 29 1995

THE SET-UPDATE SEQUENCE

in detail —

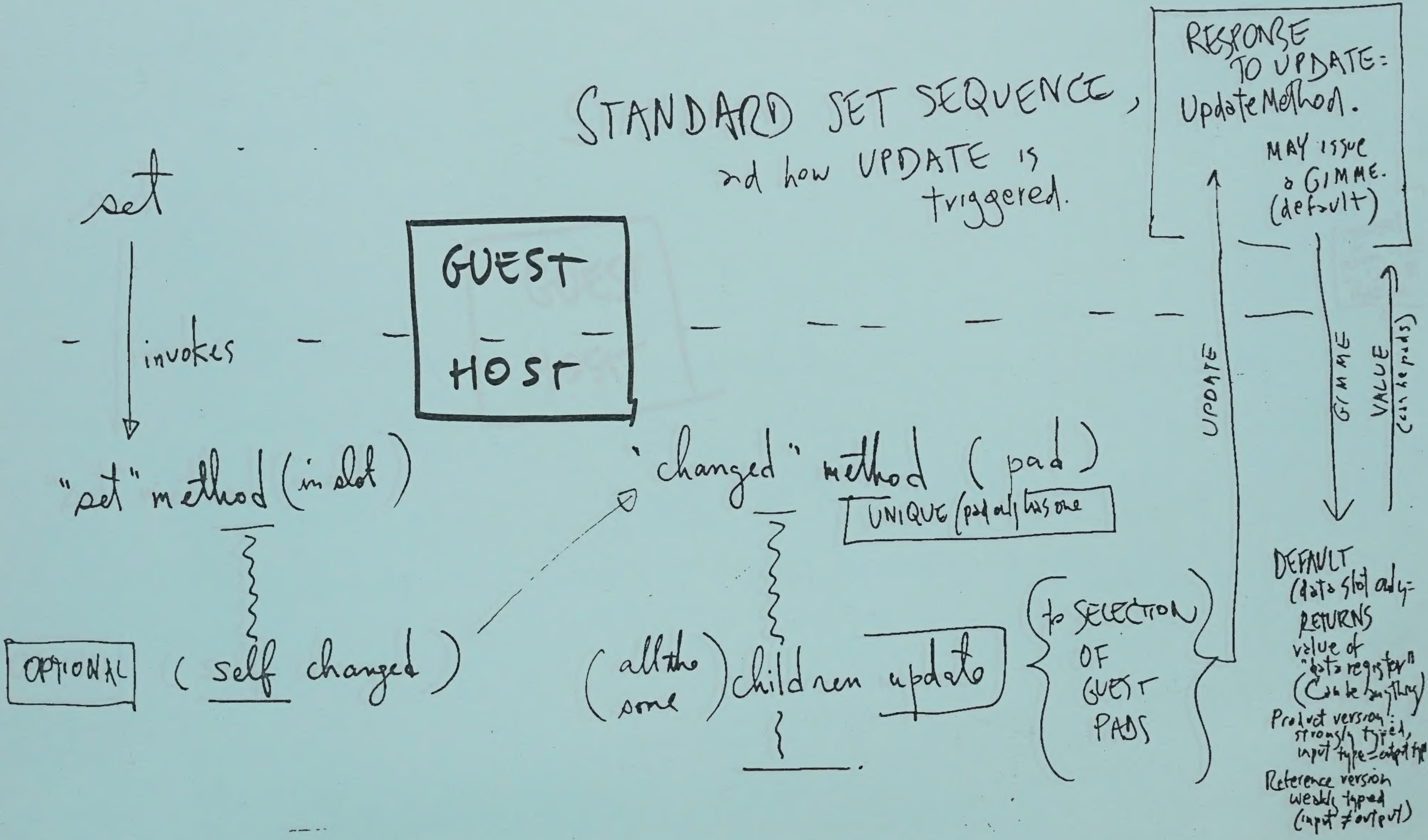
MTG APR 2 9 1995 18

STANDARD SET SEQUENCE,
and how UPDATE is triggered.


guest
set
invokes
host
"set" method (in slot)
OPTIONAL
(self changed)
"changed" method (pad)
UNIQUE (pad only has one)
(all the some) children update
(to SELECTION OF GUEST PADS)

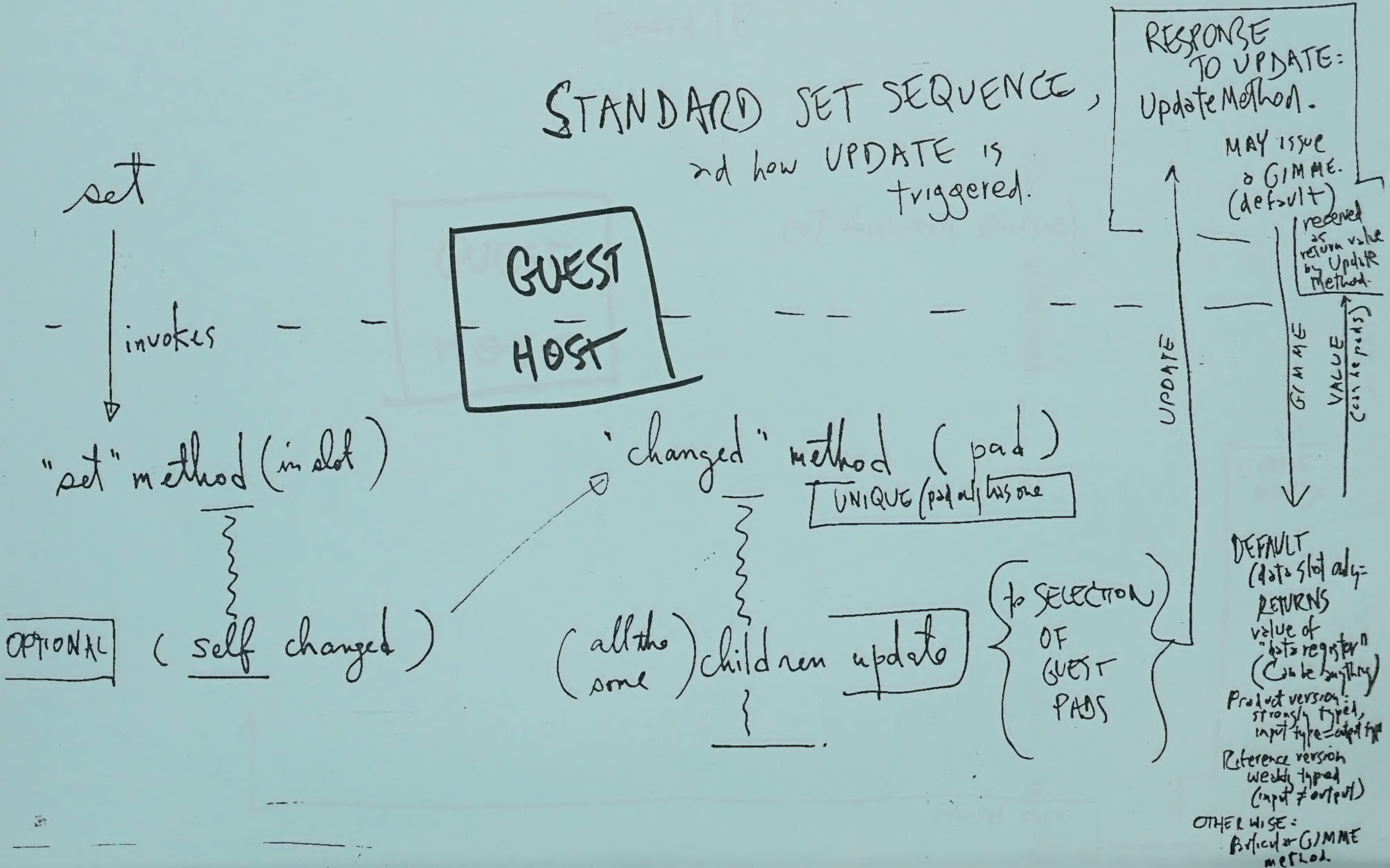
APR 29 1995

STANDARD SET SEQUENCE, and how UPDATE is triggered.


set
invokes
"set" method (in slot)
OPTIONAL
(self changed)
GUEST
HOST
"changed" method (pad)
UNIQUE (pad only has one
(all the / some) children update
to SELECTION OF GUEST PADS
UPDATE
RESPONSE TO UPDATE: UpdateMethod.
MAY issue a GIMME. (default)
GIMME
VALUE (can be pads)
DEFAULT (data slot only: RETURNS value of "data register" (Can be anything)
Product version: strongly typed, input type = output type
Reference version weakly typed (input ≠ output)

i.R APR 29 1995 20

STANDARD SET SEQUENCE, and how UPDATE is triggered.

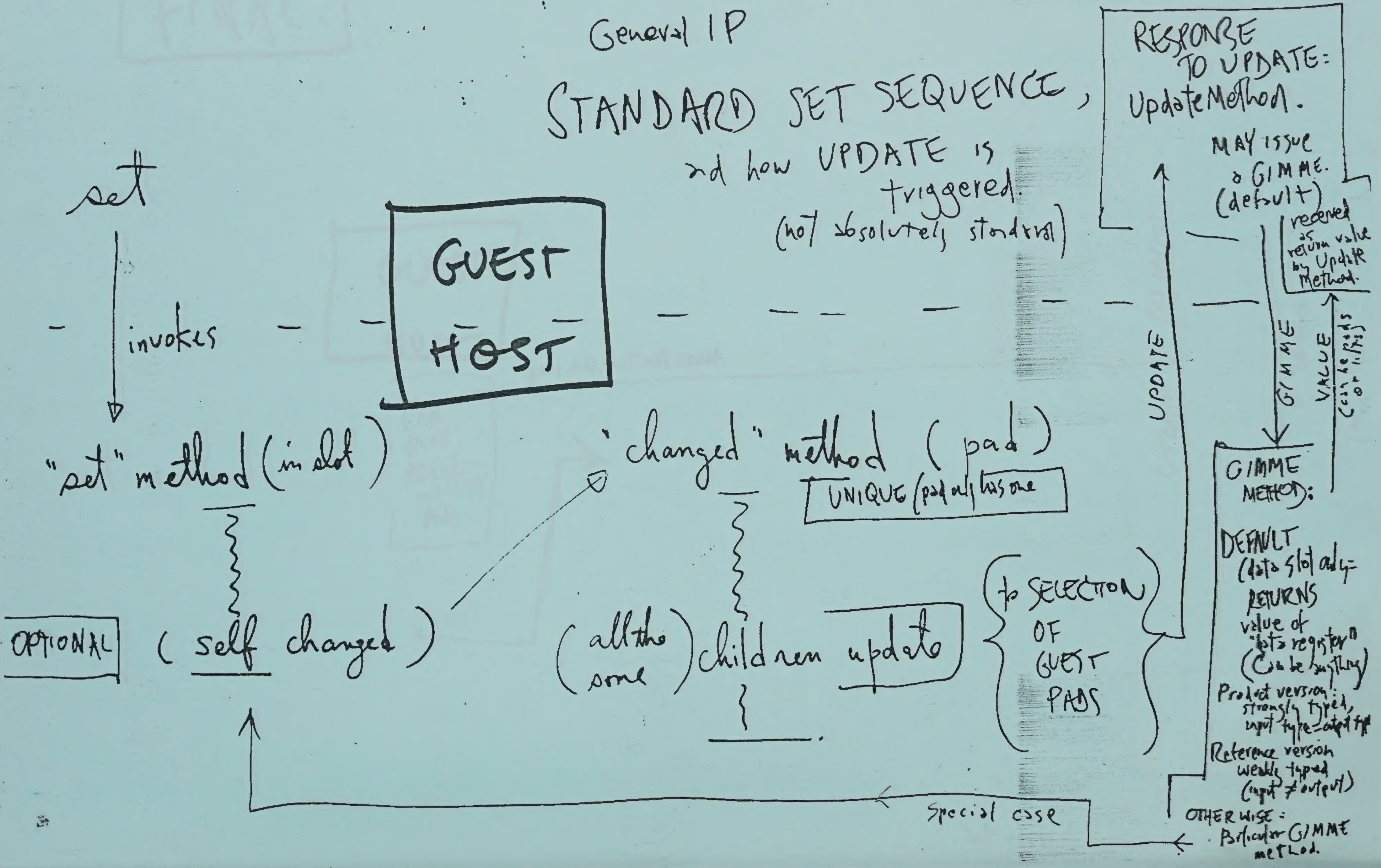

set
invokes
GUEST
HOST
"set" method (in slot)
OPTIONAL
(self changed)
"changed" method (pad)
UNIQUE (pad only has one
(all the same) children update
{ to SELECTION OF GUEST PADS }
UPDATE
RESPONSE TO UPDATE: UpdateMethod.
MAY issue a GIMME. (default)
received as return value by UpdateMethod.
GIMME
VALUE (can be pads)
DEFAULT (data slot only: RETURNS value of "data register" (Can be anything)
Product version: strongly typed, input type=output type
Reference version weakly typed (input ≠ output)
OTHERWISE: Particular GIMME method.

MRG APR 2 9 1995 21

General IP

STANDARD SET SEQUENCE,

and how UPDATE is triggered.
(not absolutely standard)


set
invokes
"set" method (in slot)
OPTIONAL
(self changed)
GUEST
HOST
"changed" method (pad)
UNIQUE (pad only has one
(all the some) children update
to SELECTION OF GUEST PADS
Special case
UPDATE
RESPONSE TO UPDATE: UpdateMethod.
MAY issue a GIMME. (default)
received as return value by Update Method.
GIMME
VALUE (can be pads or lists)
GIMME METHOD:
DEFAULT (data slot only: RETURNS value of "data register" (can be anything)
Product version: strongly typed, input type = output type
Reference version weakly typed (input ≠ output)
OTHERWISE: Particular GIMME method.

MTG APR 29 1995 22

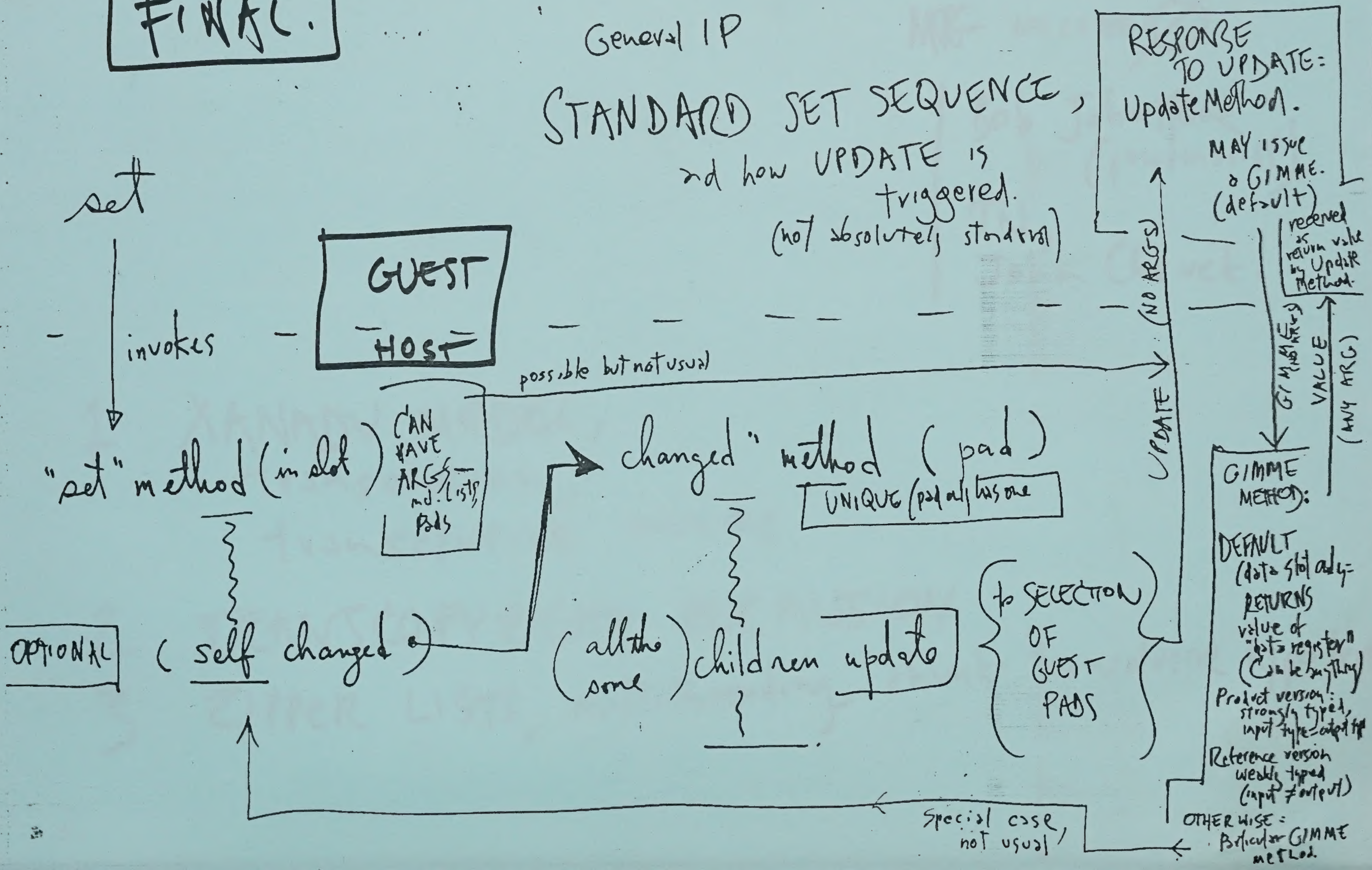
FINAL.

General IP

STANDARD SET SEQUENCE,

and how UPDATE is triggered.

(not absolutely standard)


RESPONSE TO UPDATE: UpdateMethod.
MAY issue a GIMME. (default)
received as return value by Update Method.
set
invokes
GUEST
HOST
"set" method (in slot)
CAN HAVE ARGS — and lists, pads
possible but not usual
OPTIONAL
(self changed)
"changed" method (pad)
UNIQUE (pad only has one
(all the / some) children update
{ to SELECTION OF GUEST PADS }
UPDATE
(NO ARGS)
GIMME (NO ARGS)
VALUE
(ANY ARG)
GIMME METHOD:
DEFAULT (data slot only: RETURNS value of "data register" (can be anything)
Product version: strongly typed, input type = output type
Reference version weakly typed (input ≠ output)
OTHERWISE: Particular GIMME method.
Special case, not usual

MTG APR 2 9 1995 Ø

Bob Johnstone
(journalist),
TN,
John Cheuck.

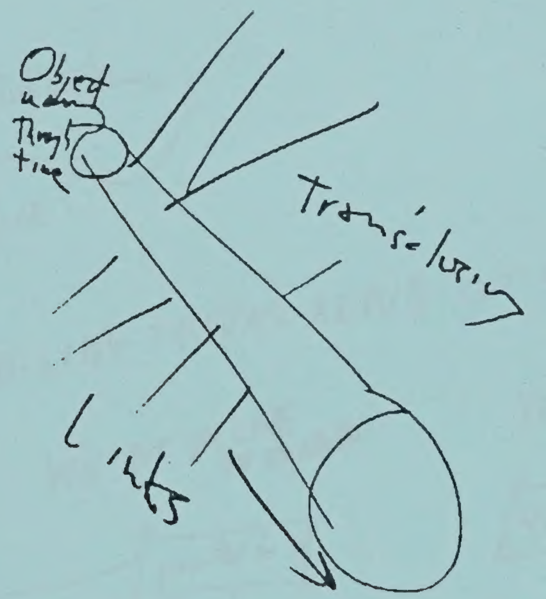
1 XANADU MODEL,
transclusion,
transclusive movies.

2 TRANSCOPYRIGHT PERMISSION
3 ZIPPER LISTS, multithreading chunk transclusive hypertext.

XANADU MODEL,

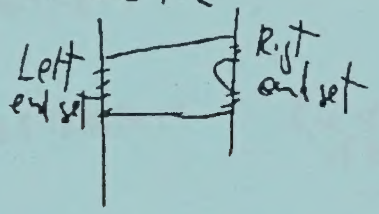
Two types of connection over time
for all types of data.

Model of:
structure
ownership
publication

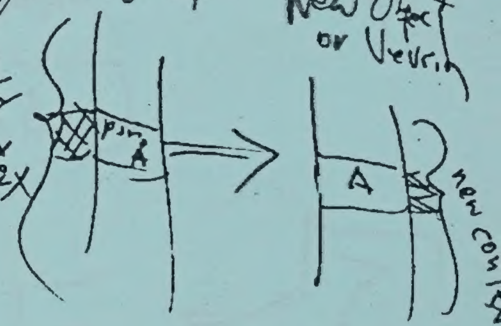

Object
naming
Thing
time
Transclusions
Links

LINK
Arbitrary connections
of arbitrary type.

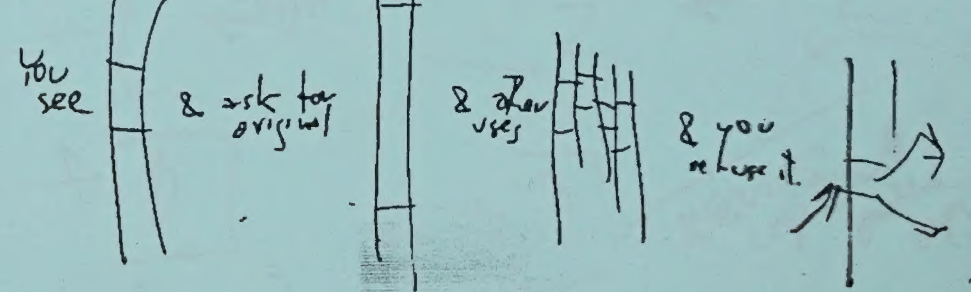
In 88.1 =


Left end set
Right end set

TRANSCLUSION
virtual inclusion
across a
document boundary
embedded instance
with original
context available.


Original
Old context
A
New Object
or Version
A
new context

Transclusive
movies


You
see
& ask for
original
& others
uses
& you
reuse it.

MTG APR 27 1995 2

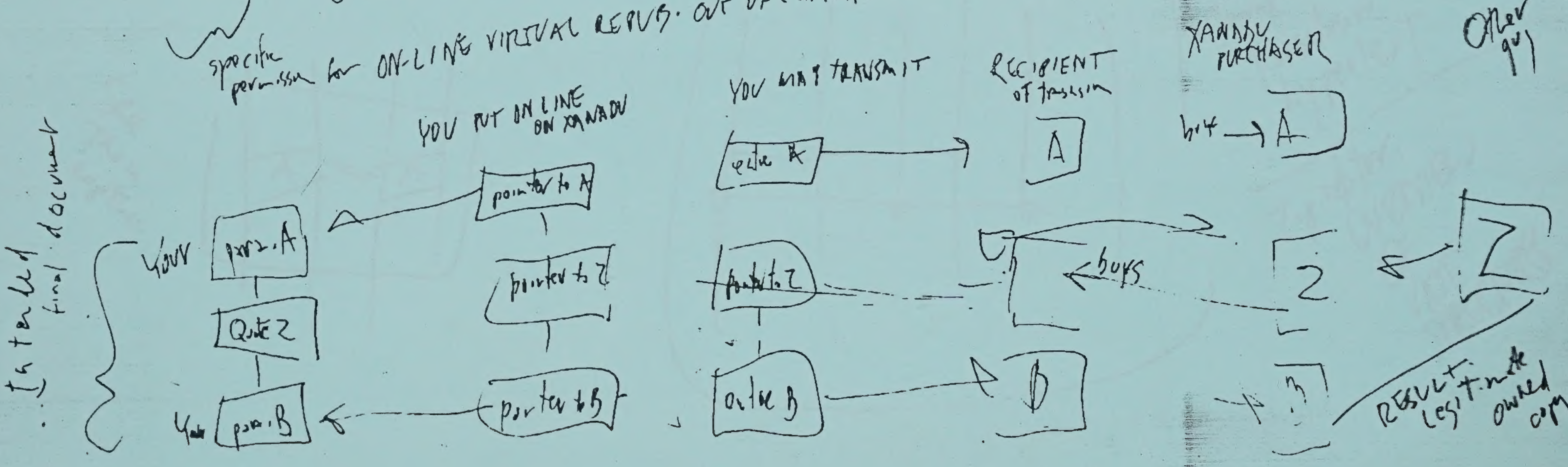
TRANSCOPYRIGHT PERMISSION.

Permission Doctrines: Shareware
copyleft
"all churches are free to copy"
TRANSCOPYRIGHT

Trans© 1995 Bob Johnstone.

© notice.

specific permission for ON-LINE VIRTUAL REPUB. OUT OF CONTEXT.

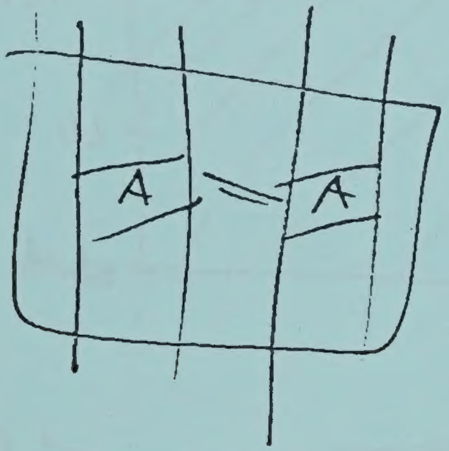


YOU PUT ON LINE ON XANADU
YOU MAY TRANSMIT
RECIPIENT of transmission
XANADU PURCHASER
Other guy
Intended final document
Your
para. A
Quote Z
Your
para. B
pointer to A
pointer to Z
pointer to B
other A
pointer to Z
other B
A
B
buys
buy → A
Z
2
3
Z
RESULT legitimate owned copy

MTG APR 2 7 1995

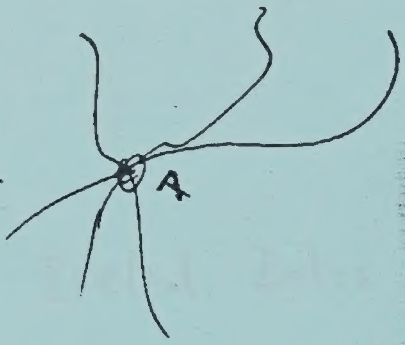
ZIPPER LISTS.

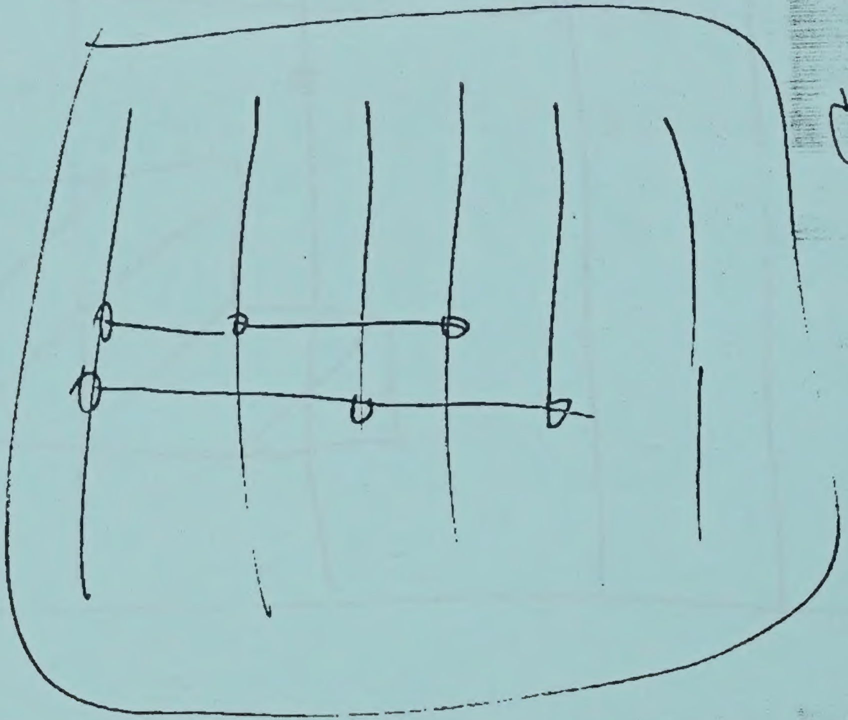
SAME OBJECT
RECOGNIZABLY ON
MULTIPLE LISTS.



See
Them
together

Multi threads
One object
on
several
threads



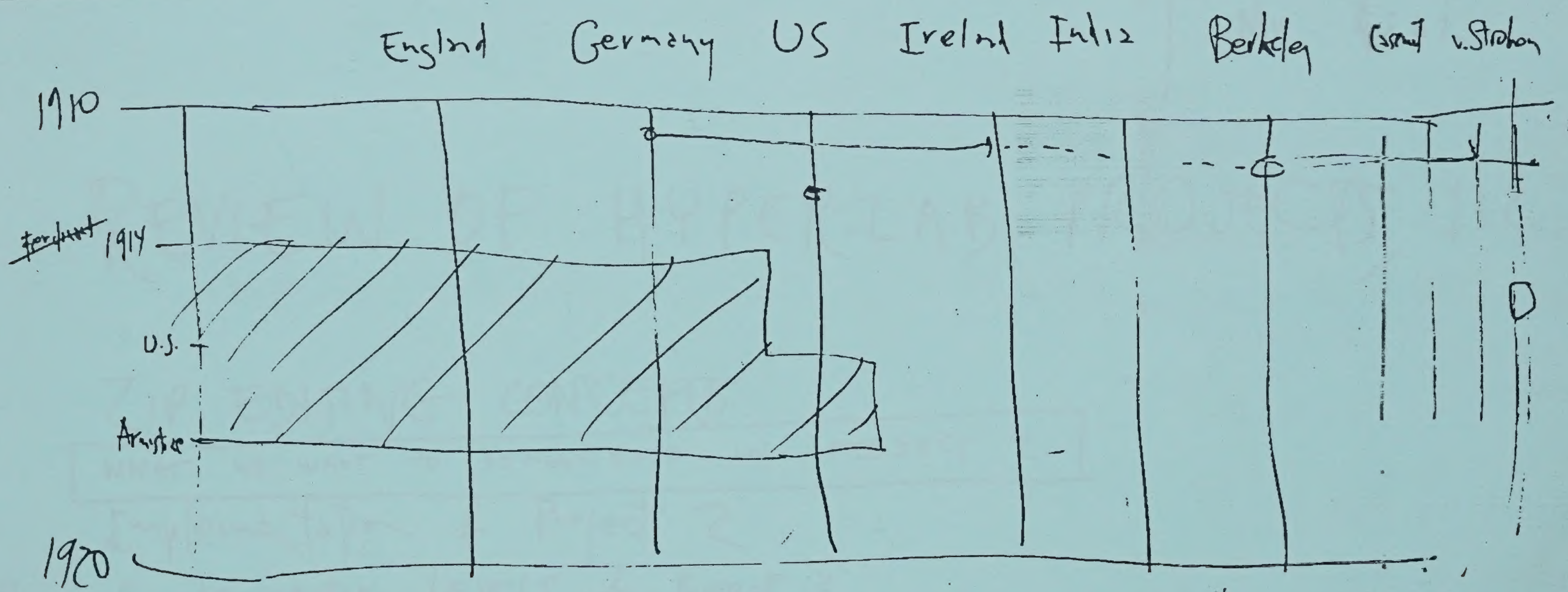


Chunk
transclusive
hypertext

Zig editor:
OVERVIEW
OF
VAST
STRUCTURES

APR 2 7 1995

Research
Elliot Porter.



MTF APR 2 8 1995 Ø

TN,
Mr. Asai.

1 REVIEW OF HYPERLAB PROJECTS, 1&2.

4 ZIP EDITING CONCEPTS.

6 WHAT WE WANT TO DEMONSTRATE IN PROJECT 2.

8 Implementation of Project 2

9 Implementation LEVELS of Project 2

11 WHY DO WE NEED ZIP OVERVIEWS?

14 Old vs. New Publishing

MTG APR 2 8 1995

1

Y. Tanaka

IntelligetPad

Distribution

Internet Browser

Zip Editing

T. Nelson

XANADU

SIMPLE BUT
HARD TO EXPLAIN

THEORIES OF
SOFTWARE DESIGN
("Theory of Virtuality")

~~VR~~

MVG APR 28 1995 2

Y. Tanaka

IntelligetPad

Distribution

Internet Browser

Zip Editing

T. Nelson

1960 – started
1965 – first paper
1968 – Worked on first visual word processor at Brown U.
:
THEY DESIGNED IT WRONG.

XANADU

SIMPLE BUT HARD TO EXPLAIN

THEORIES OF SOFTWARE DESIGN

("Theory of Virtuality")

~~VR~~

MTG APR 28 1995

3

Project 1

(Takebe, Nakajima, Nakajima)
Kambayashi?

Internet Pad Distribution
Distributed Applications on Net
Internet Browser

Project 2

(Nelson, Ookubo, Hidaka, Asai)

ZIP EDITOR
(=1965 Xanadu Design)

MTG APR 2 8 1995 4

WORD PROCESSOR

YOU MUST DECIDE

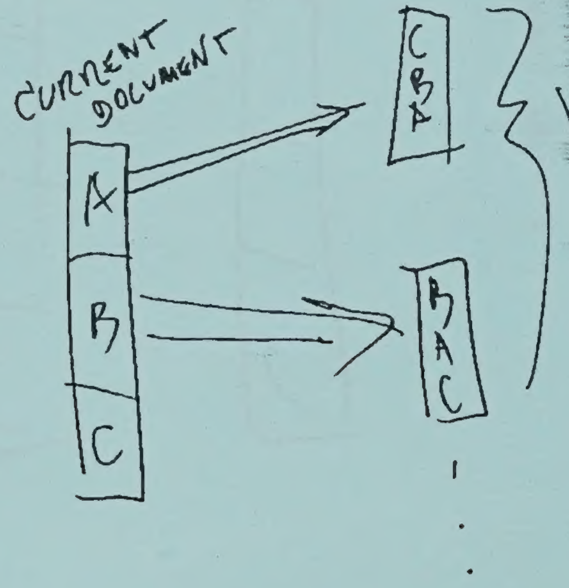
~~A, B, C~~

B, AC

only one allowed

ZIP EDITING

SIMULTANEOUS ALTERNATIVES



CURRENT DOCUMENT
A
B
C
C
B
A
B
A
C

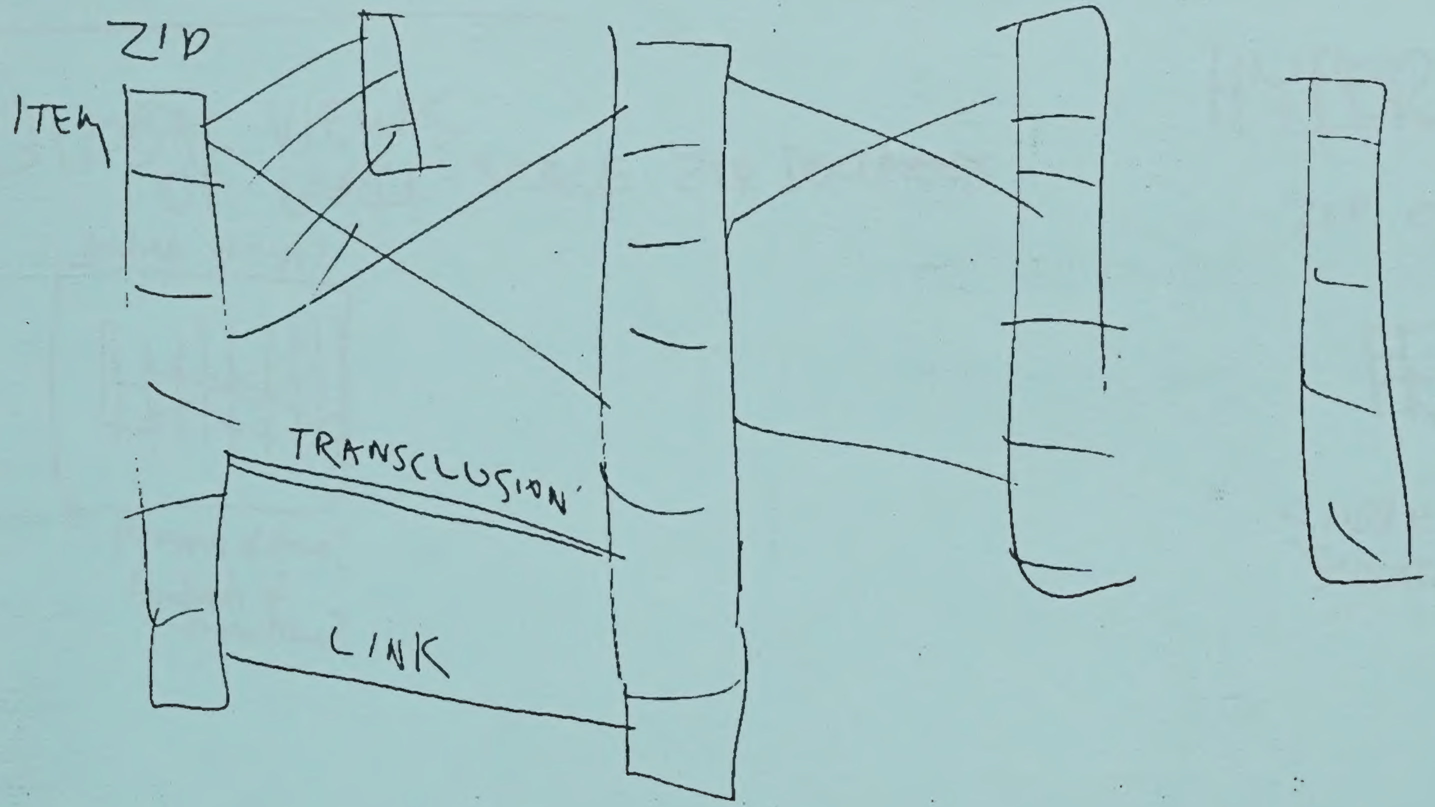
by transclusion

OR

by multiple outlines)

MTG APR 28 1995

ZIPS = SIDEWAYS - CONNECTED SEQUENCES

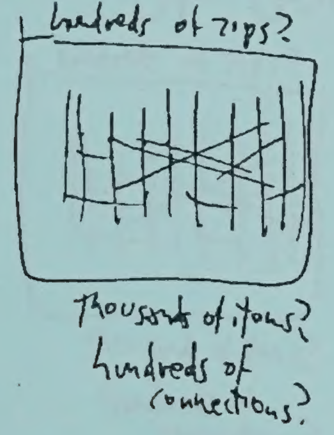

ZIP
ITEM
TRANSCLUSION
LINK

MTG APR 2 8 1995 6

7

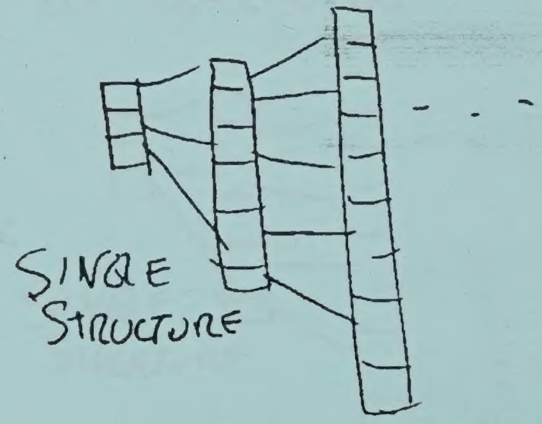
TO DEMONSTRATE IN THIS PROJECT

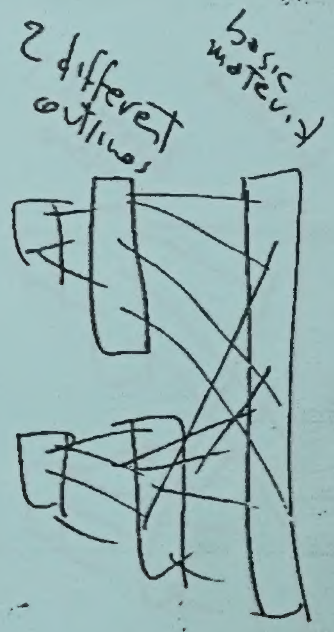
GLOBAL VIEWS OF LARGE-SCALE ZIP DOCUMENTS


hundreds of zips?
Thousands of items?
hundreds of connections?

HYPERARCHICAL STRUCTURE

ZIP OUTLINING

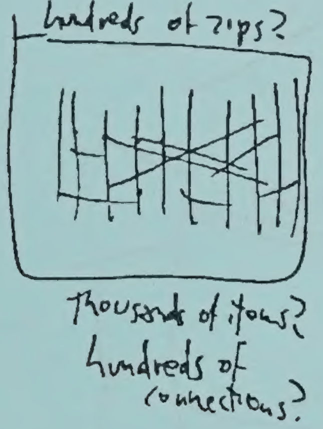

SINGLE STRUCTURE

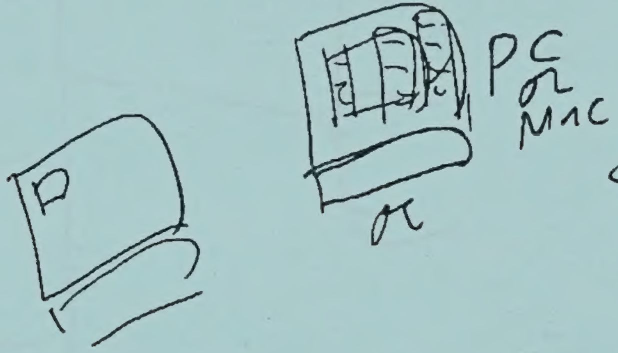

2 different outlines
basic material

MTL APR 2 8 1995 7

TO DEMONSTRATE IN THIS PROJECT

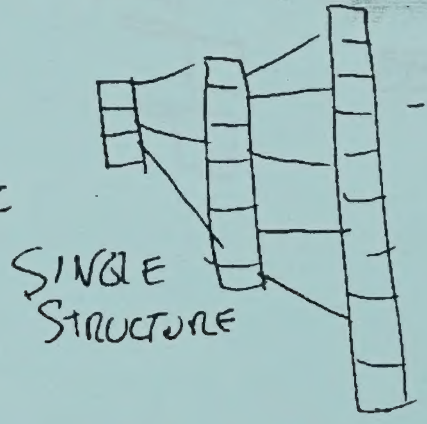
GLOBAL VIEWS OF LARGE-SCALE ZIP DOCUMENTS

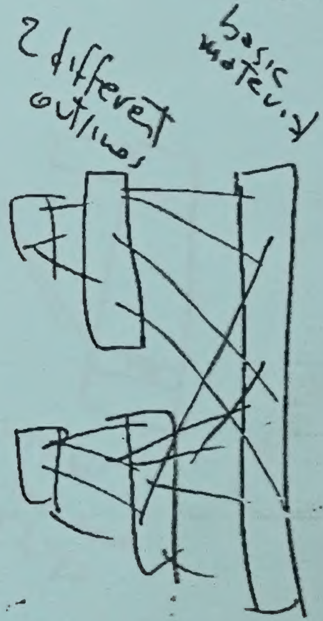

hundreds of zips?
thousands of items?
hundreds of connections?



HYPERARCHICAL STRUCTURE

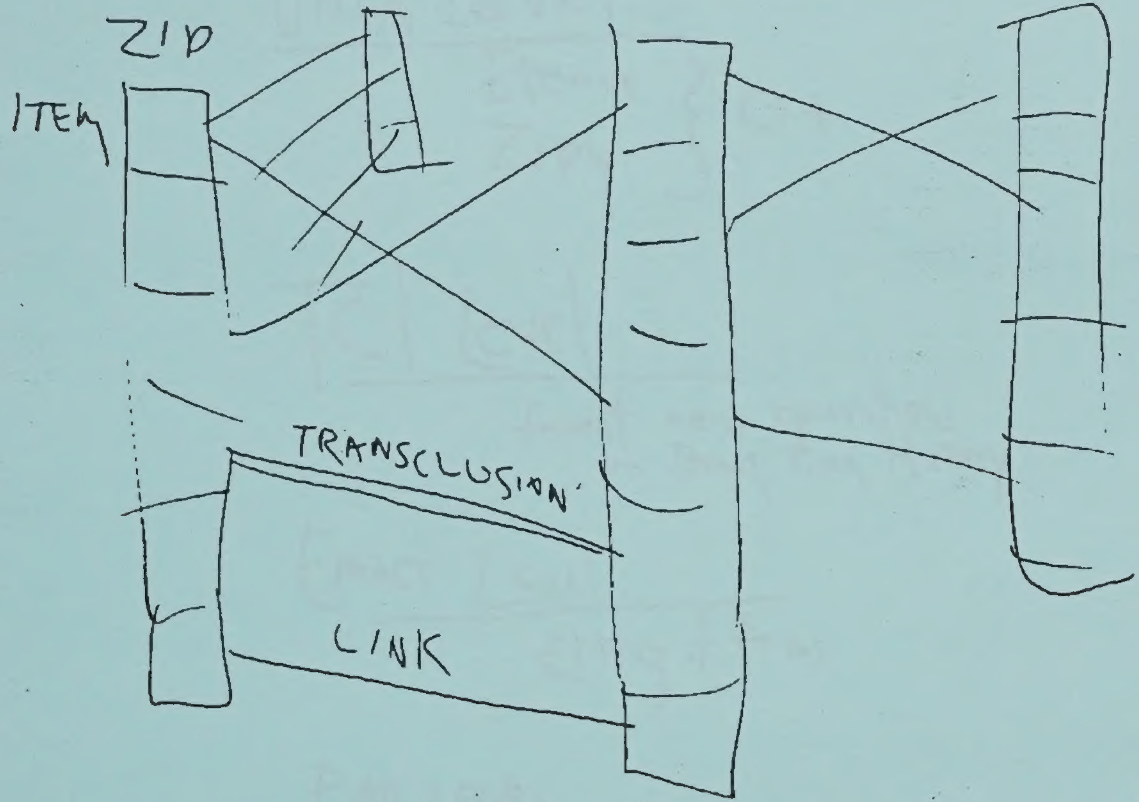
ZIP OUTLINING


SINGLE STRUCTURE


2 different outlines
basic material

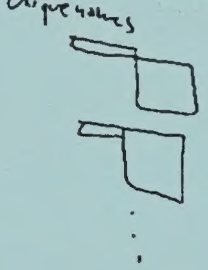
NG APR 28 1995 8

ZIPS = SIDEWAYS - CONNECTED SEQUENCES

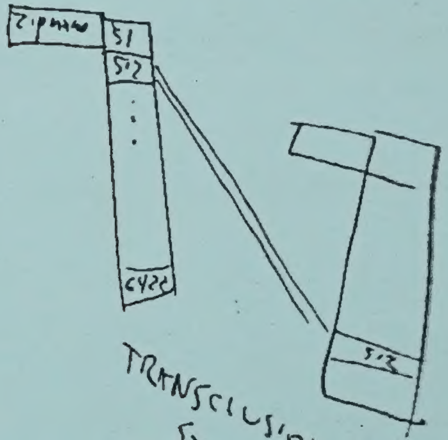

ZIP
ITEM
TRANSCLUSION
LINK

IMPLEMENTATION in our Project 2

POOL
OF
ITEMS


unique names

ZIP is a list
of
ITEM NAMES


zipname
S1
S12
S12

TRANSCLUSION:
same item name
on 2 zips

MJG APR 2 8 1995 9

IMPLEMENTATION LEVELS & Project 2

UNIX Level

$\left.\begin{array}{l}\text{Items}\\ \text{Zips}\end{array}\right\}$ C++

TCL Level

Invent new operations
on Items, Zips, History

Emacs Level

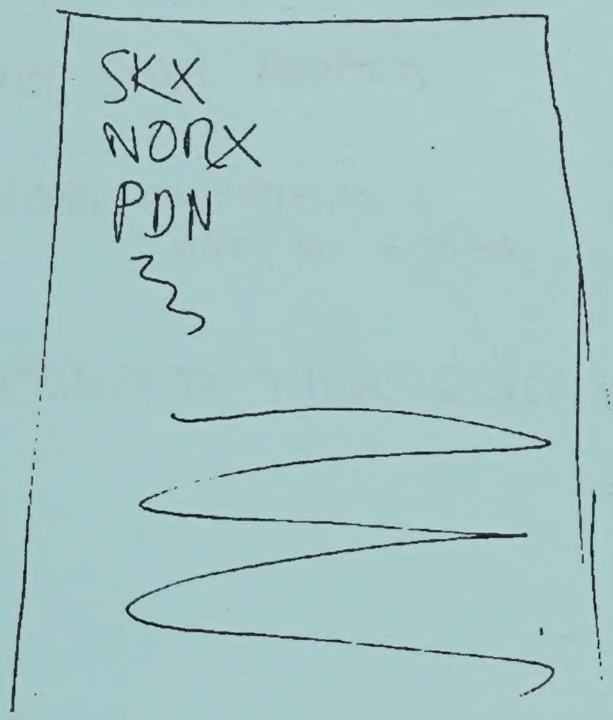
Editing of items

PAD LEVEL

DISPLAY
USER OPERATIONS

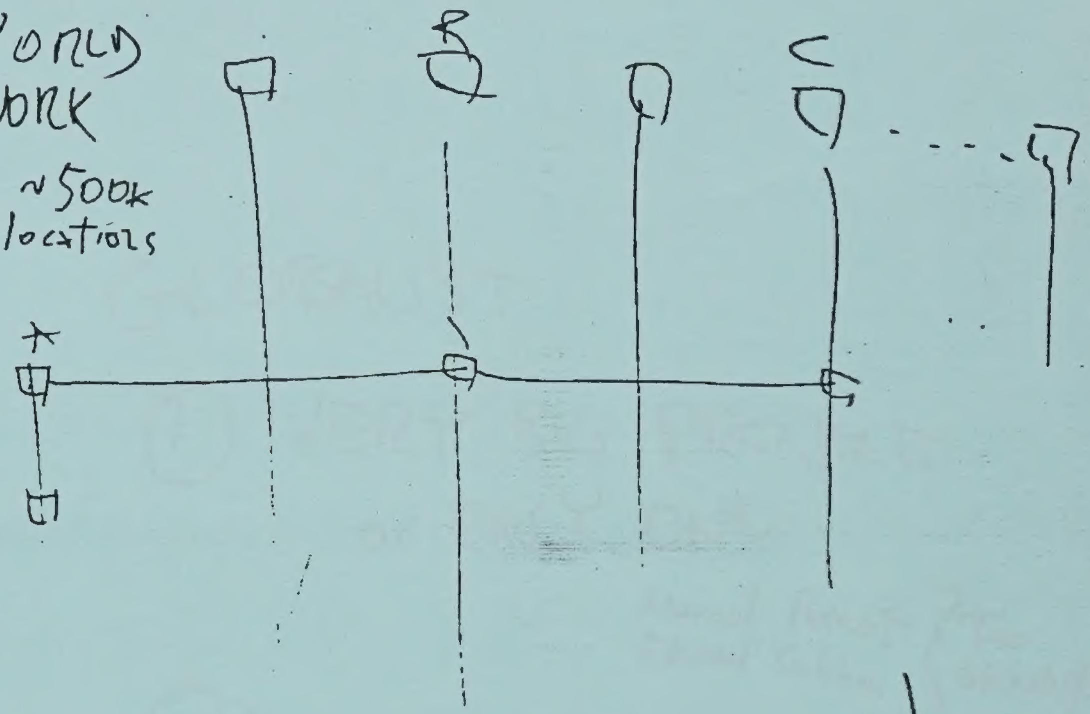
MB APR 28 1995 10

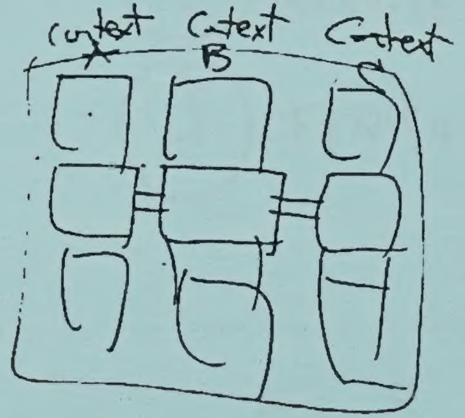
My Notes —


SKX
NORX
PDN

MY WORLD OF WORK

200k notes in ~500k virtual locations




Context
Context B
Context

NO GOOD SUBSET!

WHY DO WE NEED ZIP OVERVIEWS?

MJC APR 2 8 1995

TWO EXTREME TYPES OF WORK.

LOCALIST	GLOBALIST
① ONLY SMALL PROJECTS	① VERY BIG PROJECTS or ONLY ONE Marcel Proust Edward Gibbon } Two Globalists
② WORK ON THEM ONE AT A TIME	② WORKING ON ALL PARTS OF IT
③ COMPLETE THEM QUICKLY	③ FINISH EVENTUALLY (not soon)

Two more Globalists

MB APR 28 1995 #12

$\left.\begin{array}{l}\text{Buckminster}\\\text{Bucky}\end{array}\right\}$ Fuller → "GENERALIST"

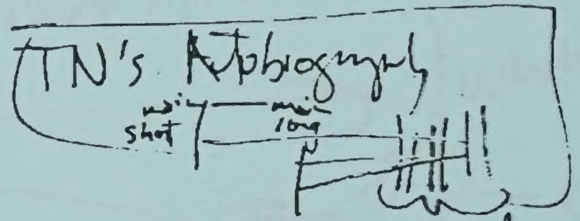
$\overline{\text{TN}}$ → MANY AREAS OF RESEARCH

III → HANNA KRETZ OF [illegible]

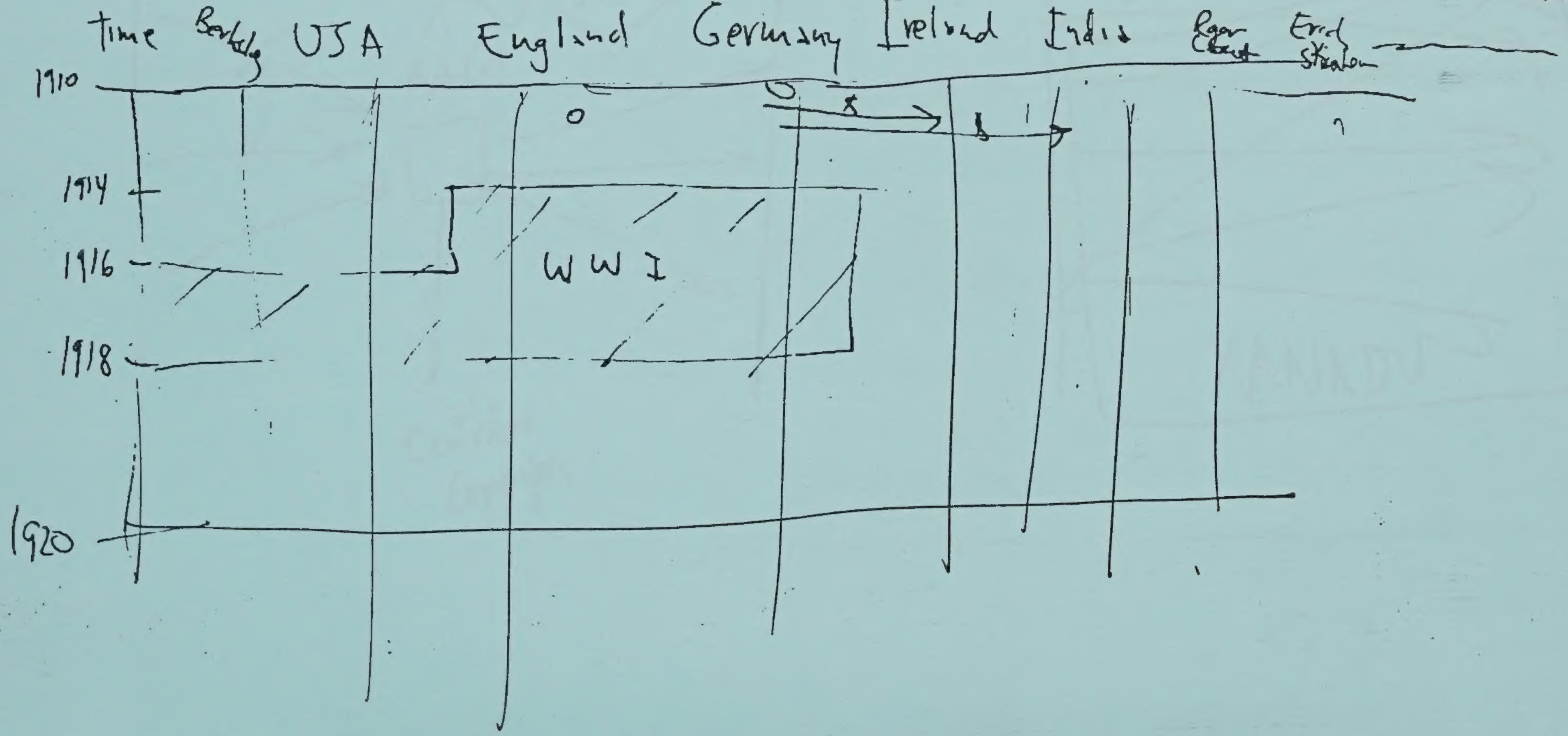
[illegible] } Fuller → "Constructist"
Buckminster

MTG APR 2 8 1995

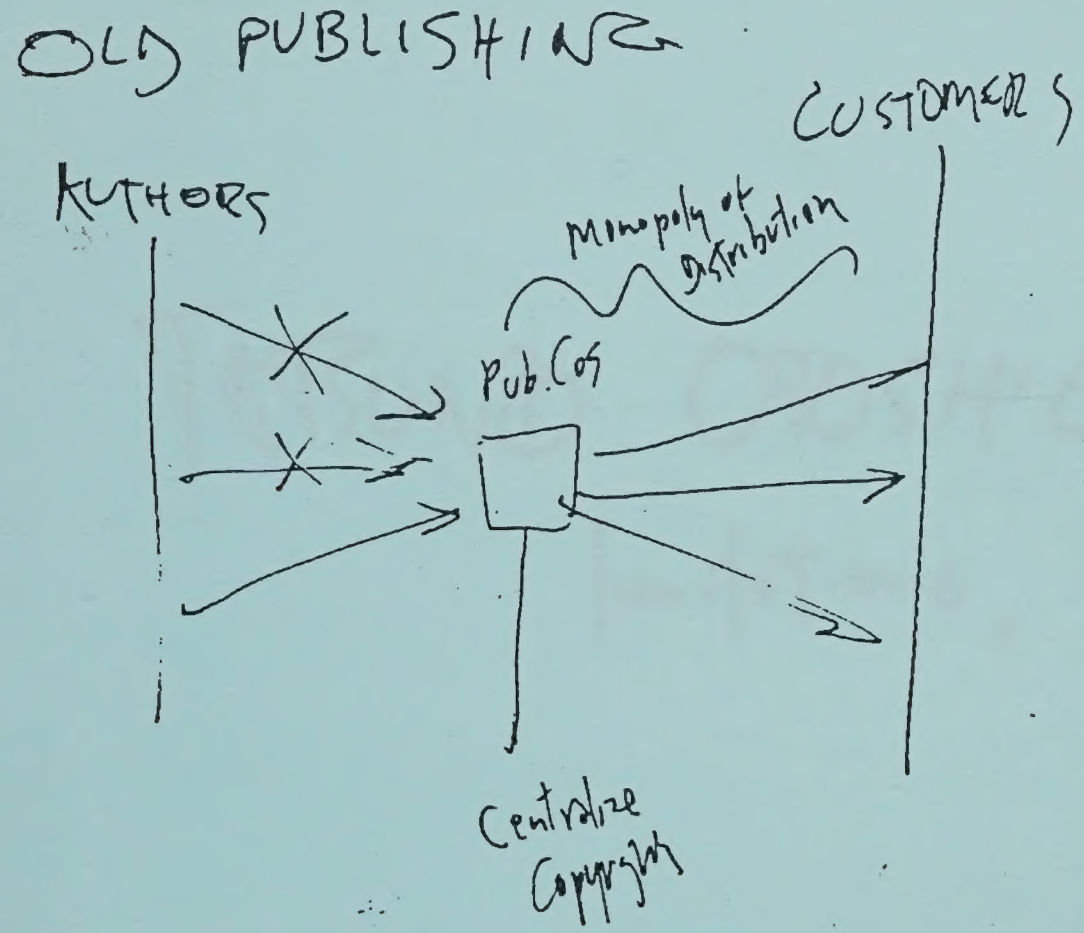
PRACTICAL APPLICATIONS: HISTORY as CONNECTED STORIES

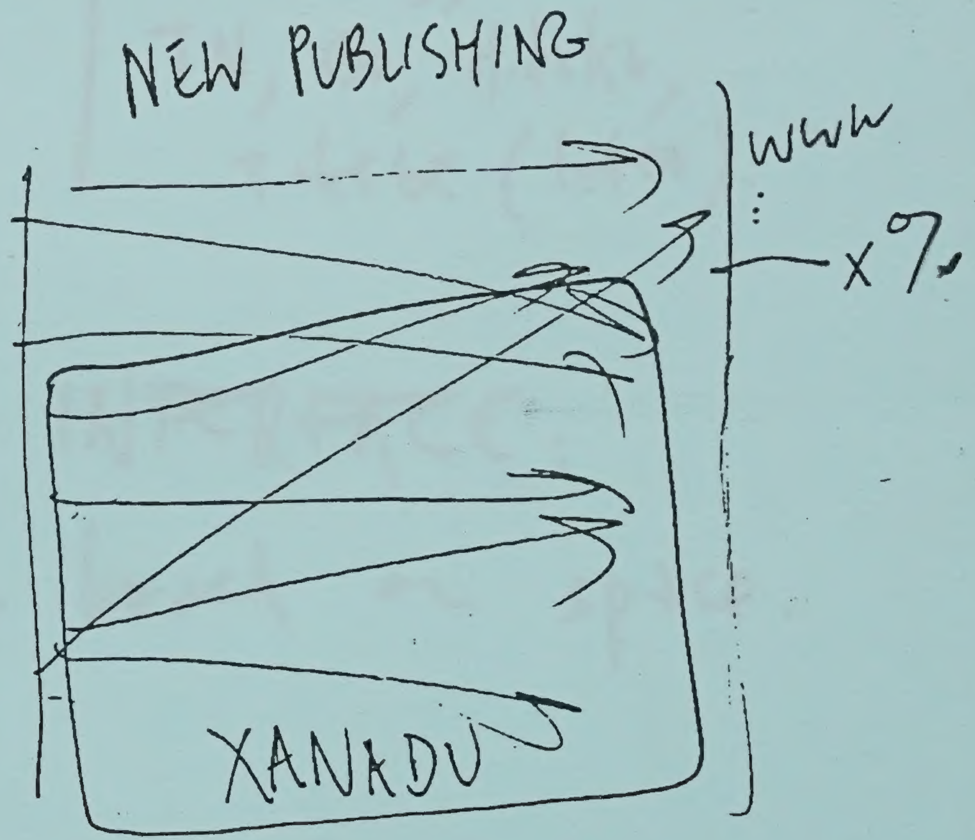

TN's Autobiography
noisy short
main long
hundreds of other stories

Elliot Porter's Research


time
Berkeley
USA
England
Germany
Ireland
India
Roger Casement
Erich Stralon
1910
1914
1916
1918
1920
WW I

MB APR 2 8 1995


OLD PUBLISHING
AUTHORS
CUSTOMERS
Pub.Cos
Monopoly of distribution
Centralize Copyright


NEW PUBLISHING
WWW
x%
XANADU

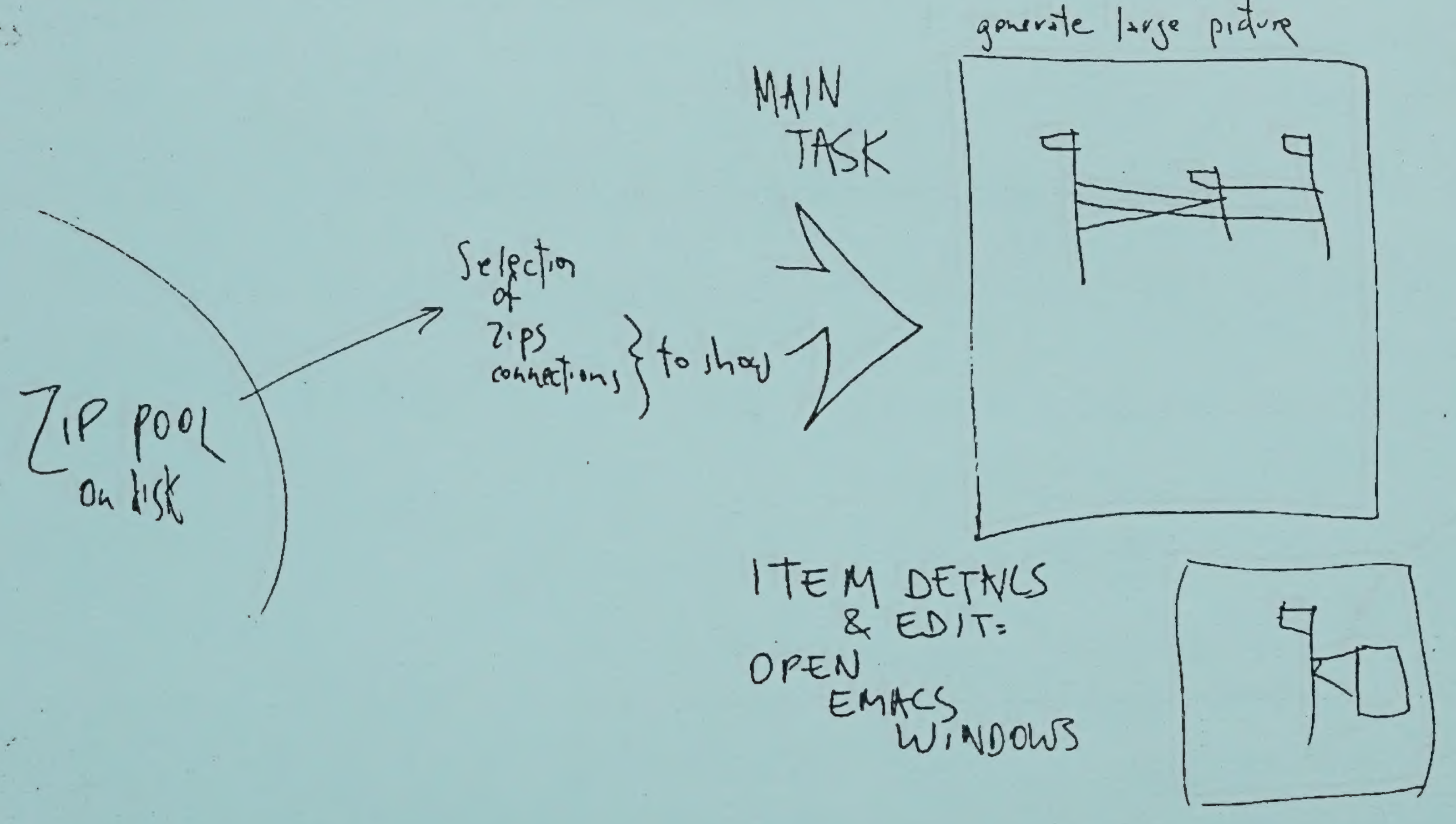
APR 2 6 1995

YT (later),
TN, Oo, Hidaka,
Takebe (later).

TATSUNO OTOSHIGO INTERFACE:
limitations, esp. break on space.

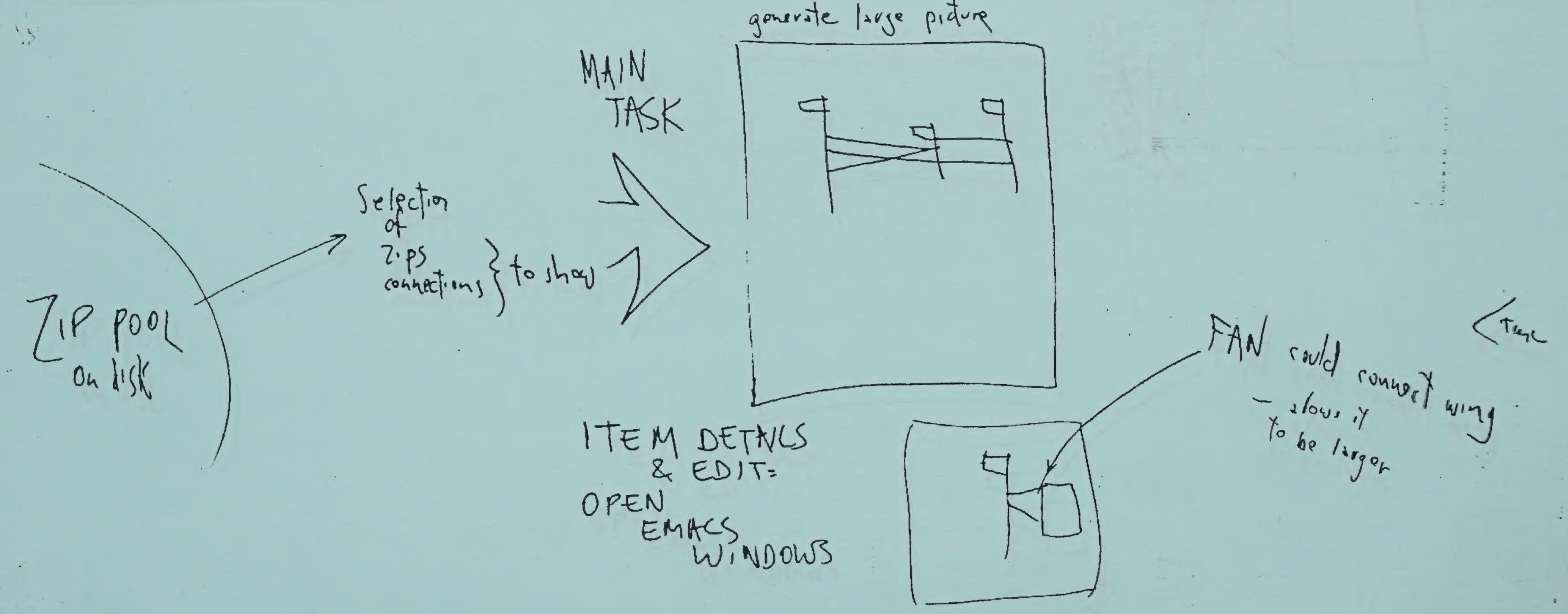
MG APR 2 6 1995 1

VERY SIMPLEST Totsuno ©toshigo


ZIP POOL
on disk
Selection
of
zips
connections
to show
MAIN
TASK
generate large picture
ITEM DETAILS
& EDIT:
OPEN
EMACS
WINDOWS

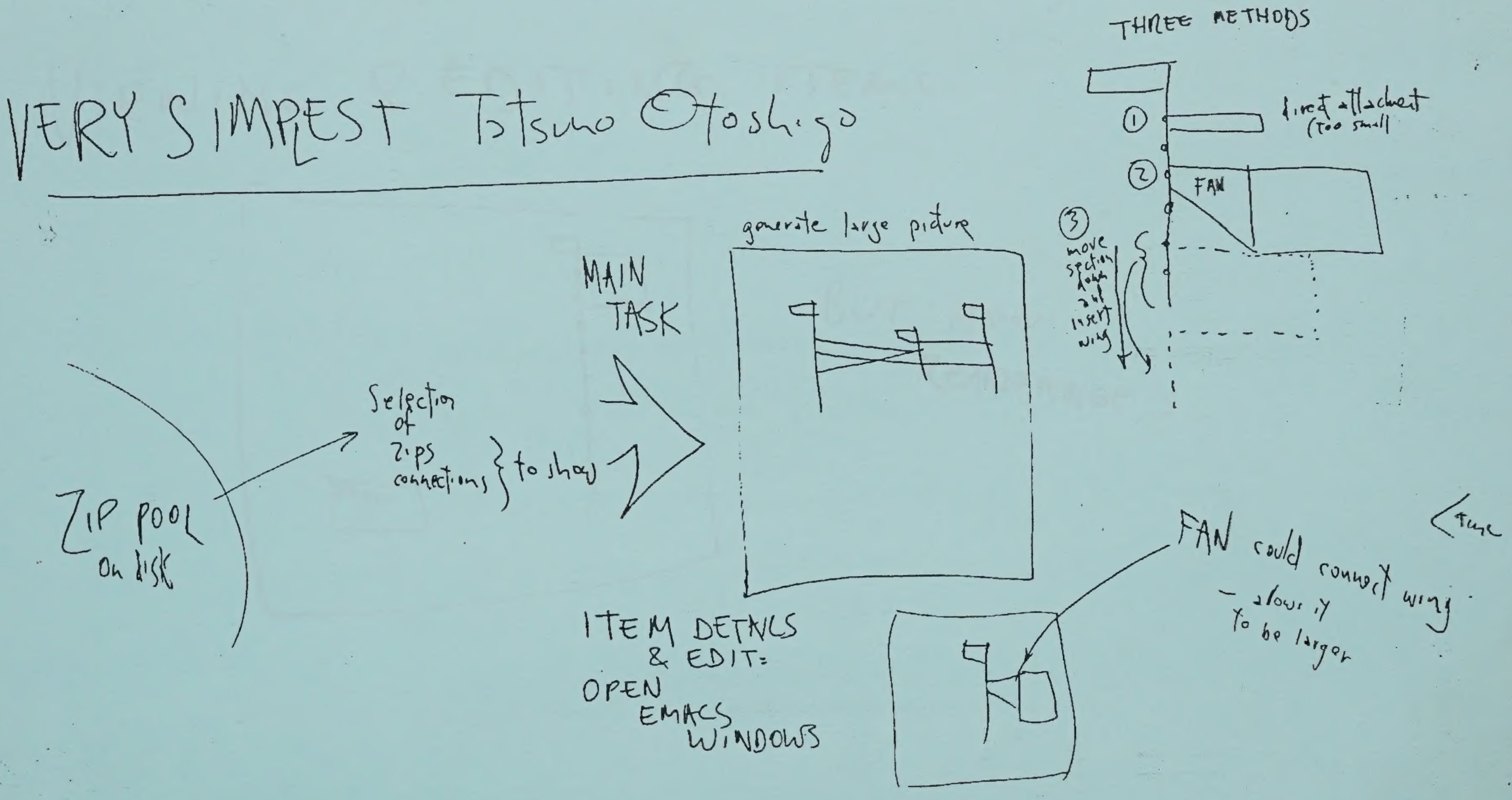
NTL APR 2 6 1995 2

VERY SIMPLEST Tatsuno Otoshigo


ZIP POOL
on disk
Selection
of
zips
connections
to show
MAIN
TASK
generate large picture
ITEM DETAILS
& EDIT:
OPEN
EMACS
WINDOWS
FAN could connect wing
- allows it
to be larger
<Tage

MOG APR 2 6 1995 3

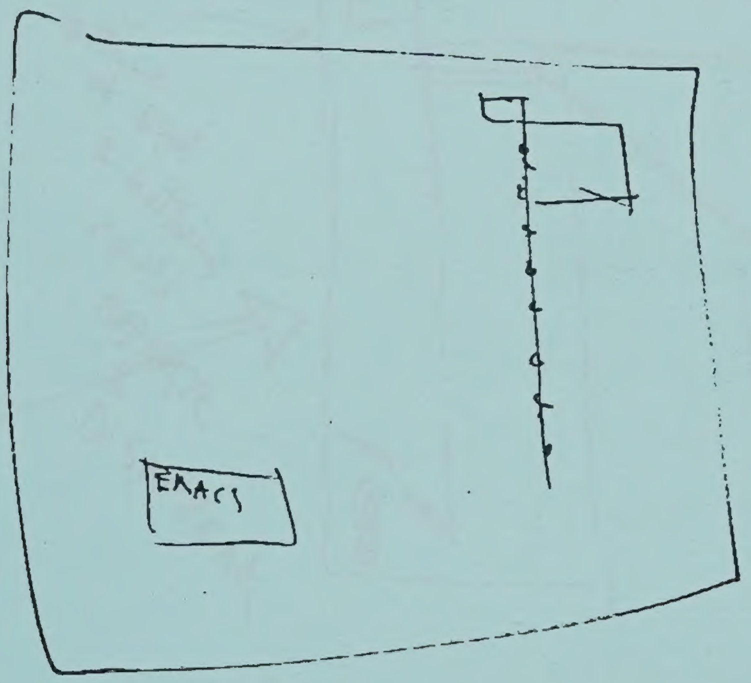
VERY SIMPLEST Totsuno Otoshigo


ZIP POOL
on disk
Selection of zips connections } to show
MAIN TASK
generate large picture
ITEM DETAILS & EDIT: OPEN EMACS WINDOWS
THREE METHODS
①
direct attachment (too small
②
FAN
③
move section down and insert wing
FAN could connect wing
- allowing it to be larger
< time

(Joined by YT & Jakebe)

MTG APR 26 1995 4

VIEWING & EDITING ITEMS



BUT HOW
REARRANGE?

[illegible]
[illegible]

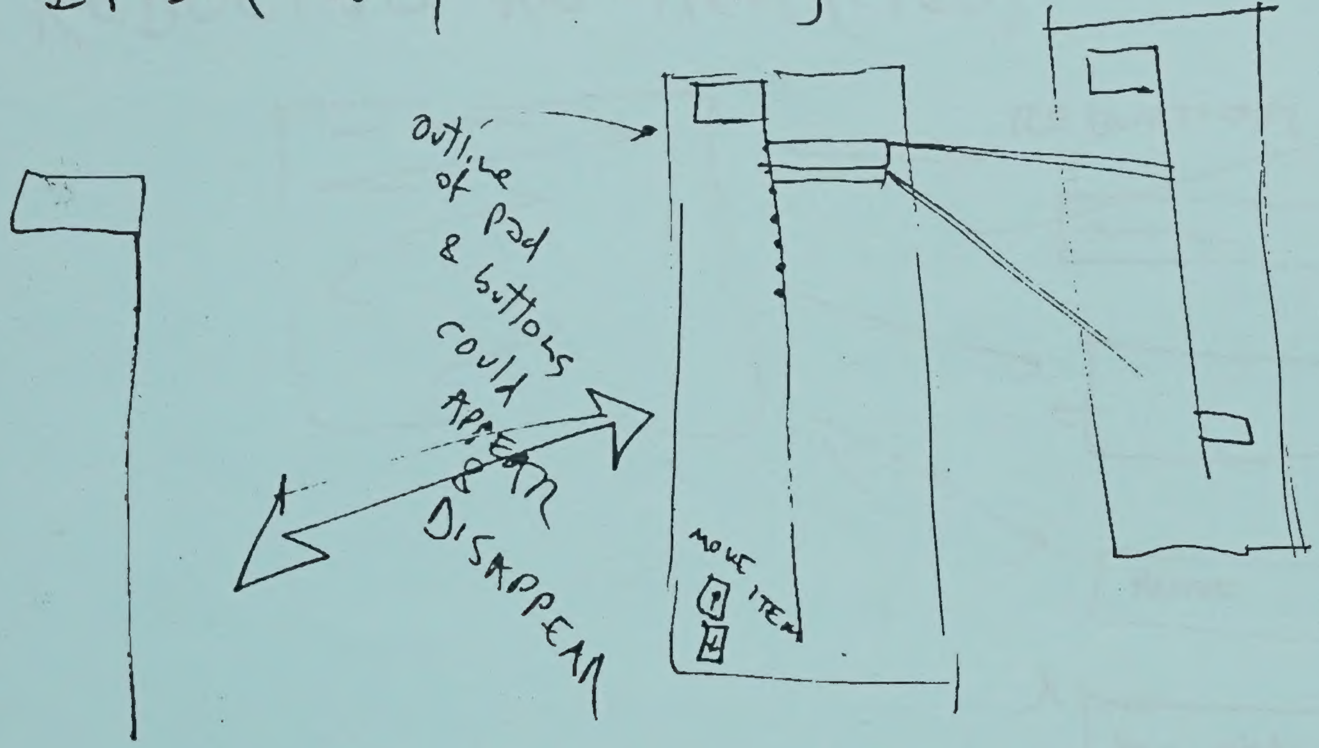
VIEWING & EDITING ITEMS

[illegible]

([illegible])

MTG APR 2 6 1995 5

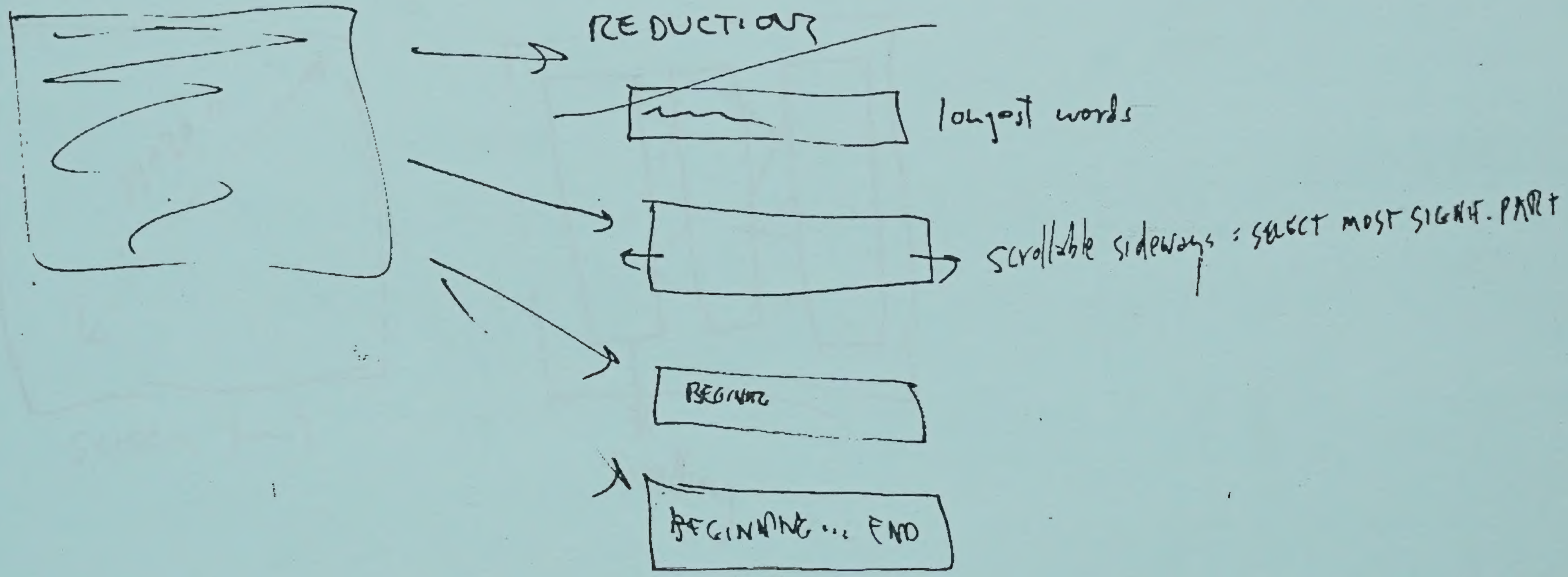
IPish way of handling interface for rearrange —


outline of pad & buttons could appear & disappear
MOVE ITEM

CAN WE MAGNIFY QUICKLY?

MJG APR 2 6 1995 6

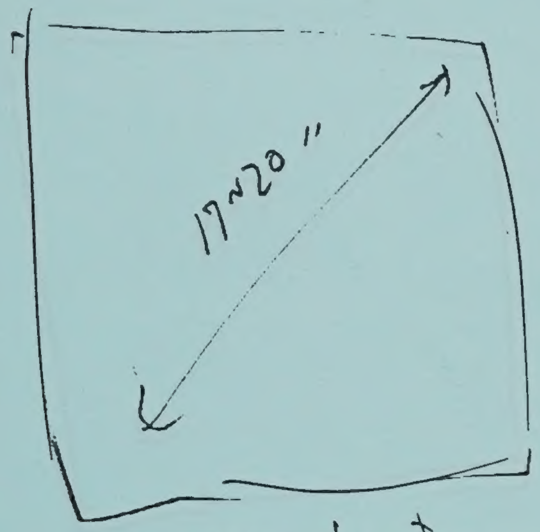
REDUCING AN ITEM (1960)


REDUCTIONS
longest words
scrollable sideways : SELECT MOST SIGNIF. PART
BEGINNING
BEGINNING ... END

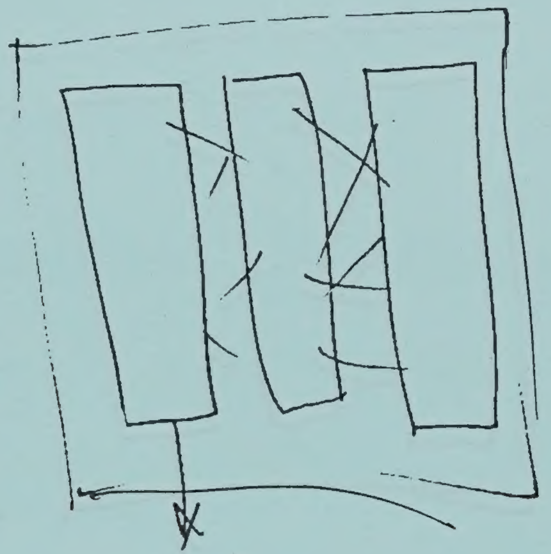
KEDUCING MY NEW (JEEP?)

MG APR 2 6 1995

Agreed: ~3 COLUMNS TO SCREEN for comparison & rearrangement



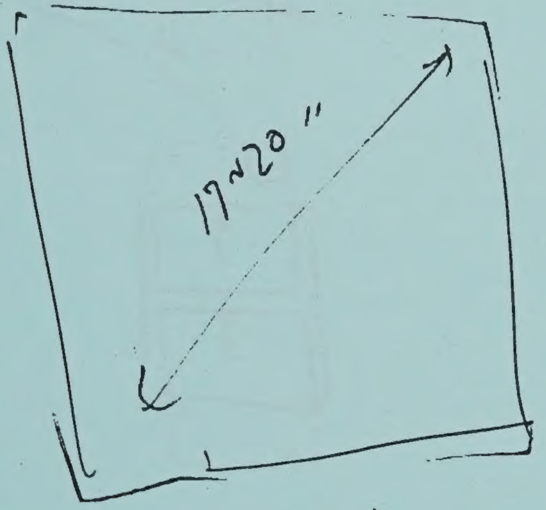
screen limit



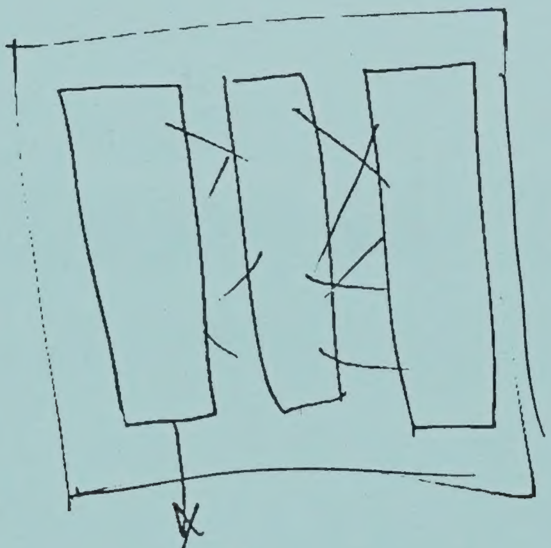
Scrolling

MTG APR 2 6 1995

Agreed: ~3 COLUMNS TO SCREEN for comparison & rearrangement

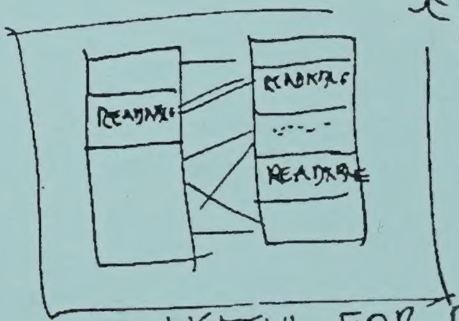


screen limit



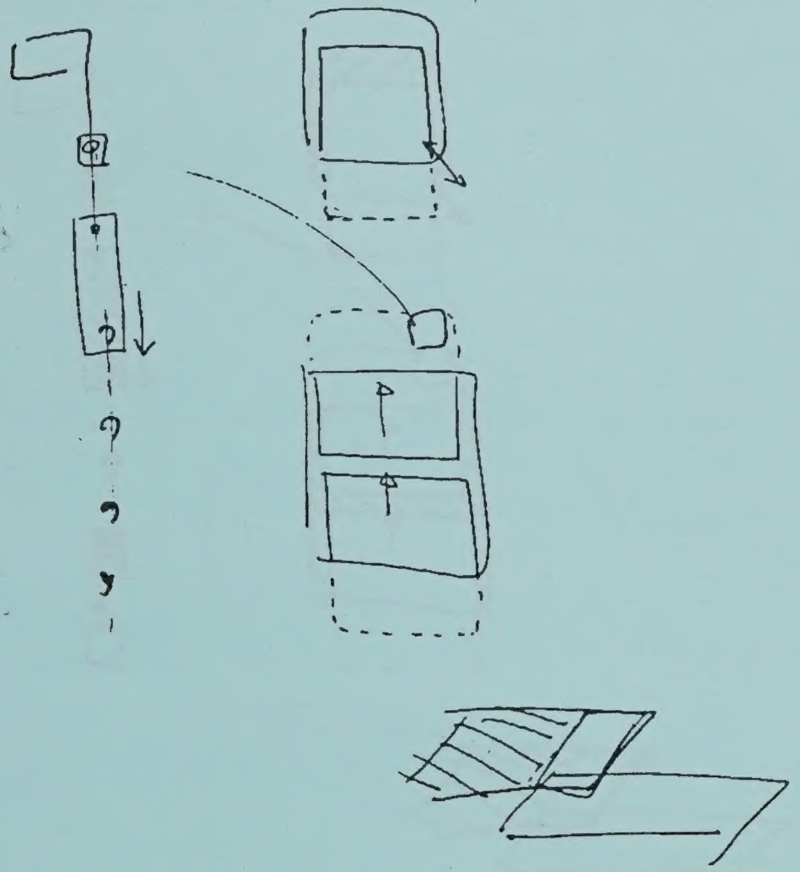
Scrolling

MORE EXTREME SHRINKING CAN SOMETIMES BE USEFUL


READINGS
READINGS
READINGS

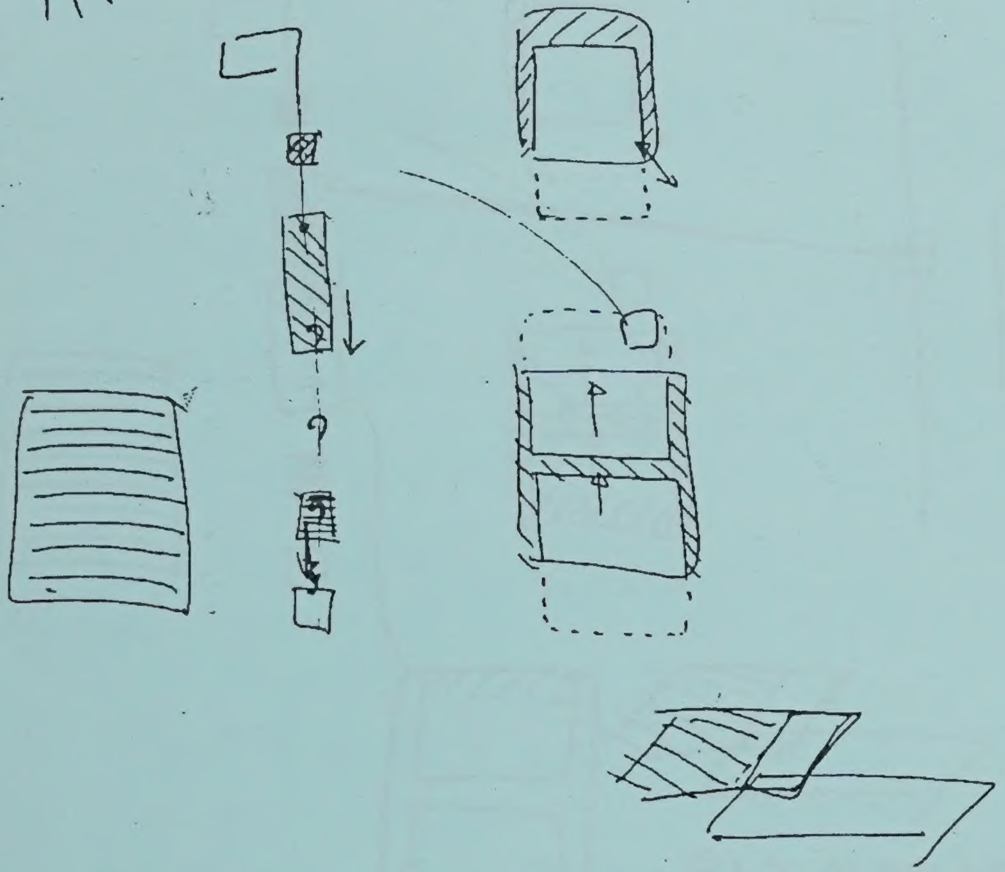
USEFUL FOR OTHER RELATIONS

MTG APR 2 6 1995 8



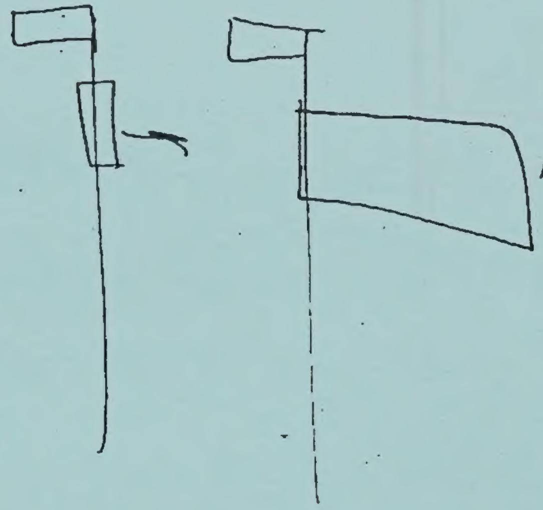
MJG APR 2 6 1995 9

Q1.



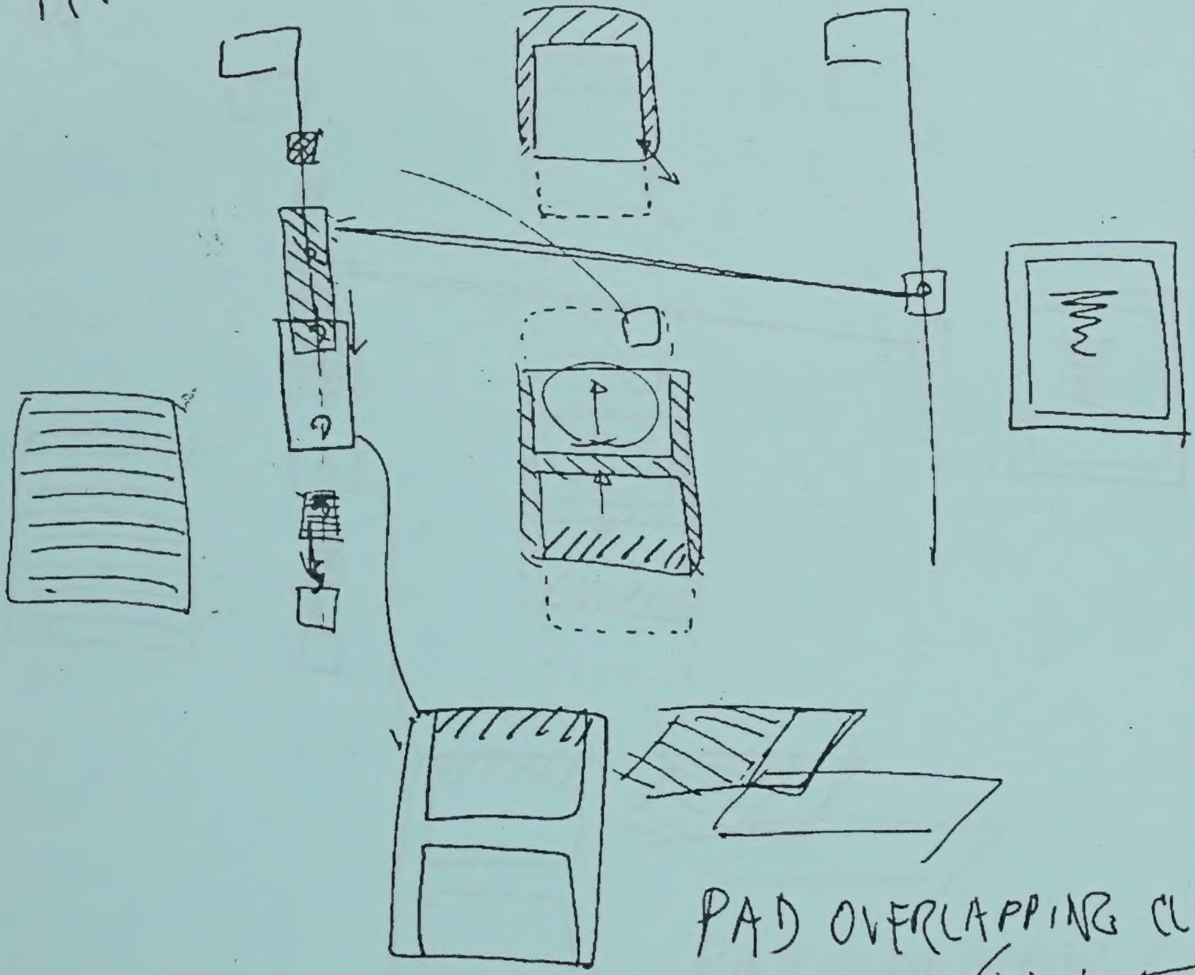
PAD OVERLAPPING CLIPS.
(default)

T.
Can we do this?



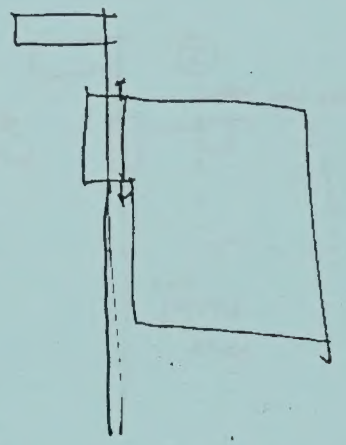
MTG APR 2 6 1995 1,0

97.

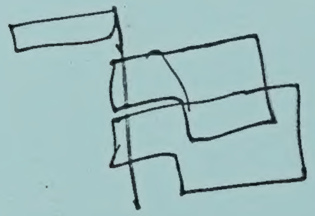


PAD OVERLAPPING CLIPS.
(default) ←

I would prefer some attachment

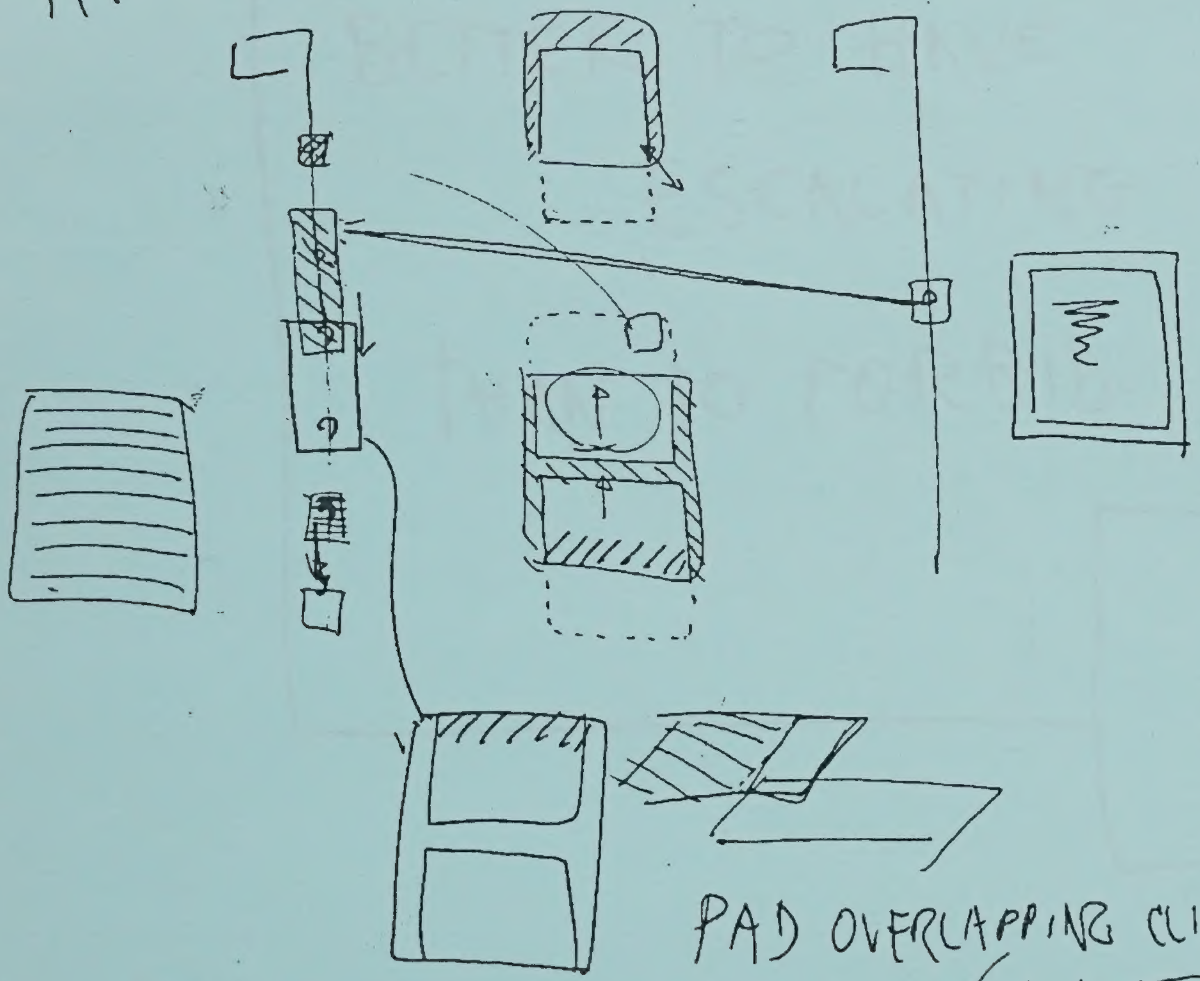


but overlap problem —



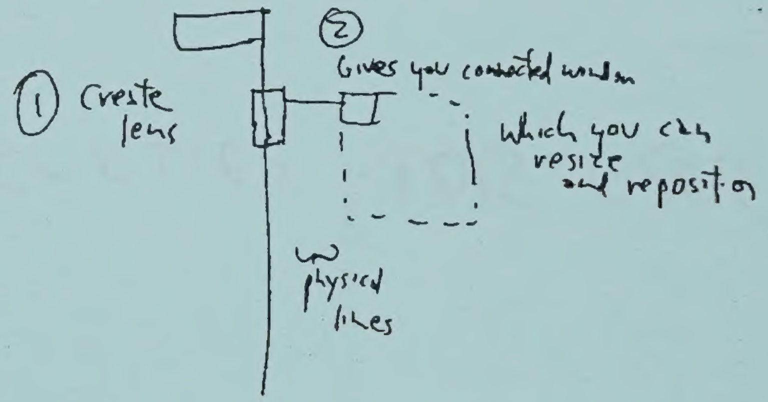
mtc APR 2 6 1995

97.



PAD OVERLAPPING CLIPS.
(default)

How about this?


① Create lens
② Gives you connected window
which you can resize and reposition
w/ physical lines

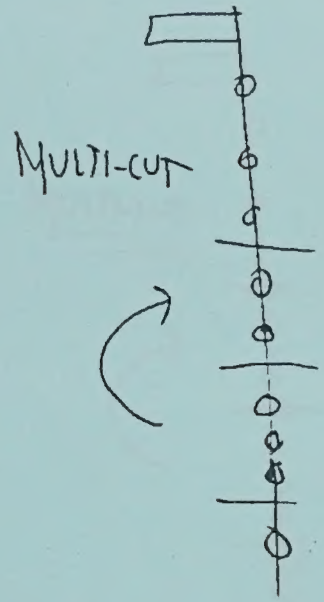
MTG APR 2 6 1995 12

A motto:

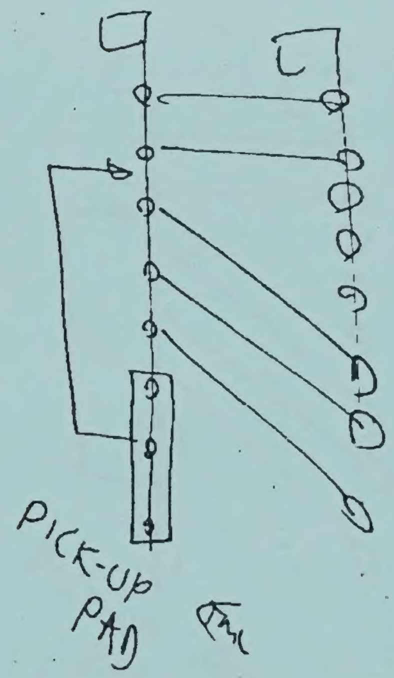
BETTER TO HAVE
ESCALATING DIFFICULTIES FOR USER
THAN TO FORBID.

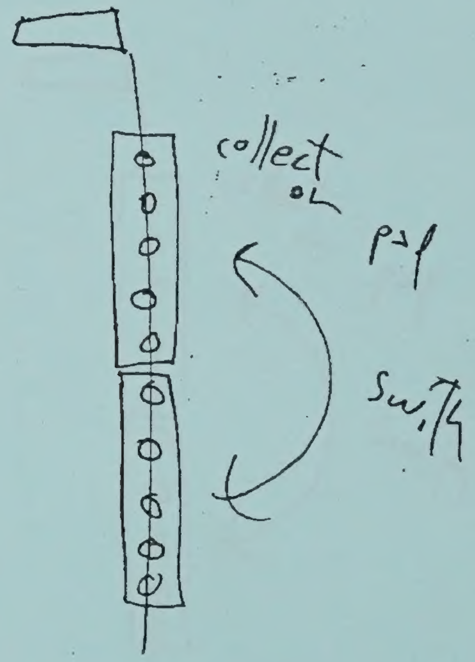
"It's like life."

APR 2 6 1995 13



Grouped rearrangement

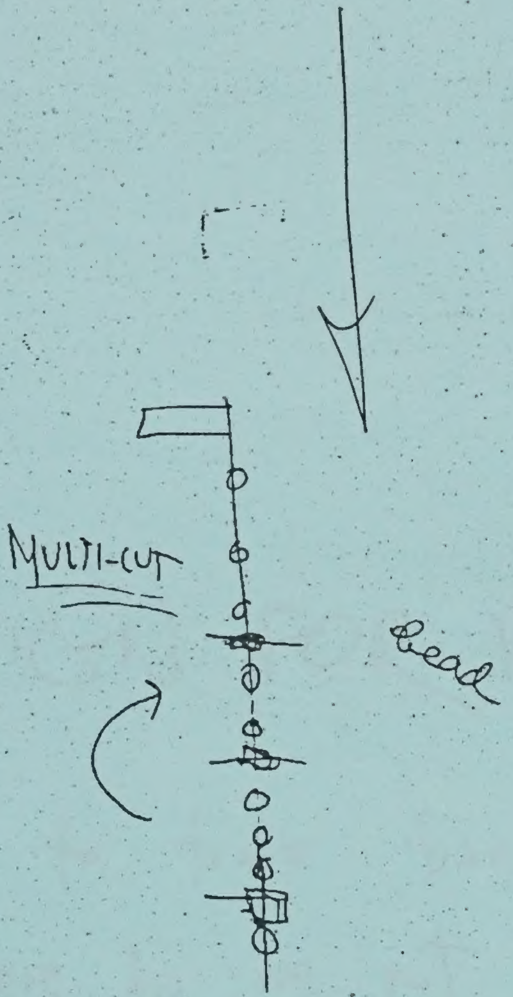



collect on pad
switch

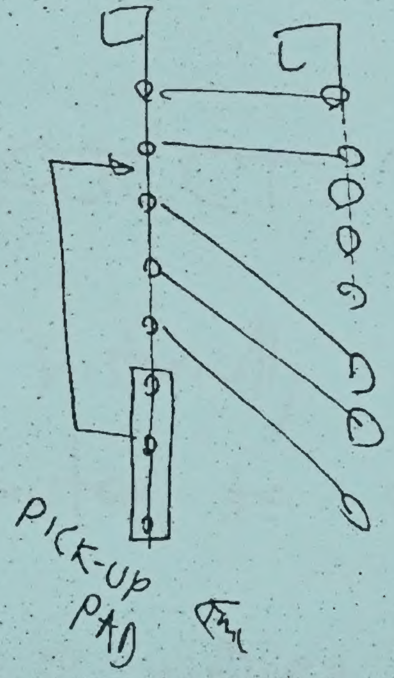
¿HOW INTERACTS WITH SLIDING WINDOW?

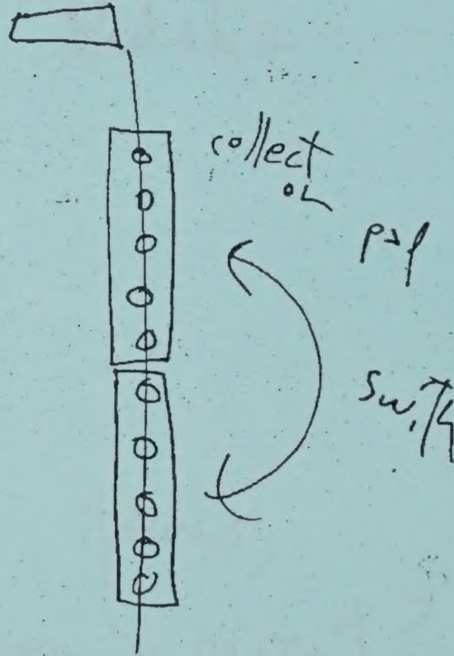
Mr. Orlando suggests –

MTG APR 2 6 1995 14


MULTI-CUT
bead

Grouped rearrangement




collect on pad
switch

¿ HOW INTERACTS WITH SLIDING WINDOW?

MKG APR 1 8 1995

TN
Ookubo
Hidaka

FILE DESIGN FOR PROJECT 2.

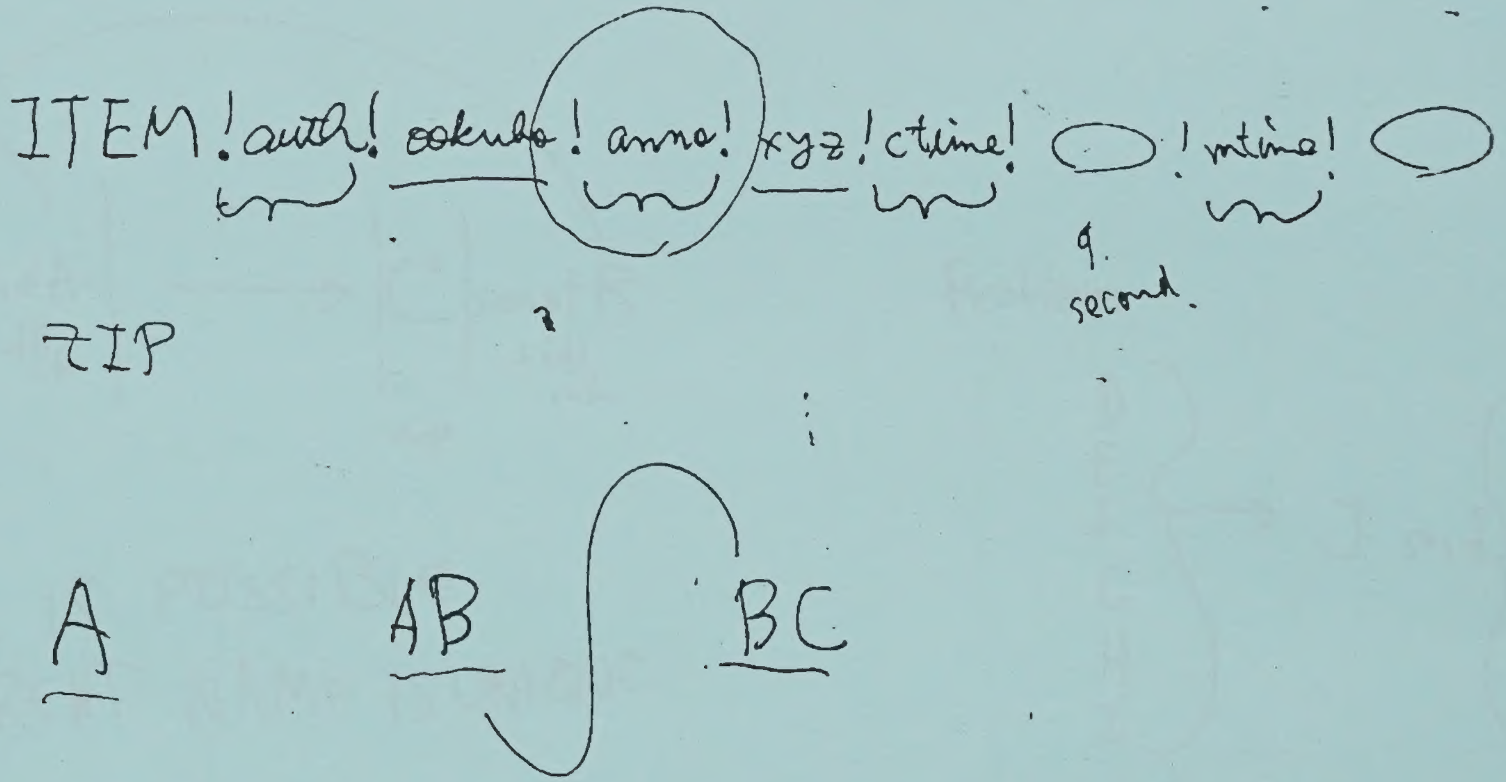
In order to trace back historically among items, where do we put pointer to an item's parent?

POSSIBLE REDESIGN & Proj. 2 pictures FOR EFFICIENCY.

1

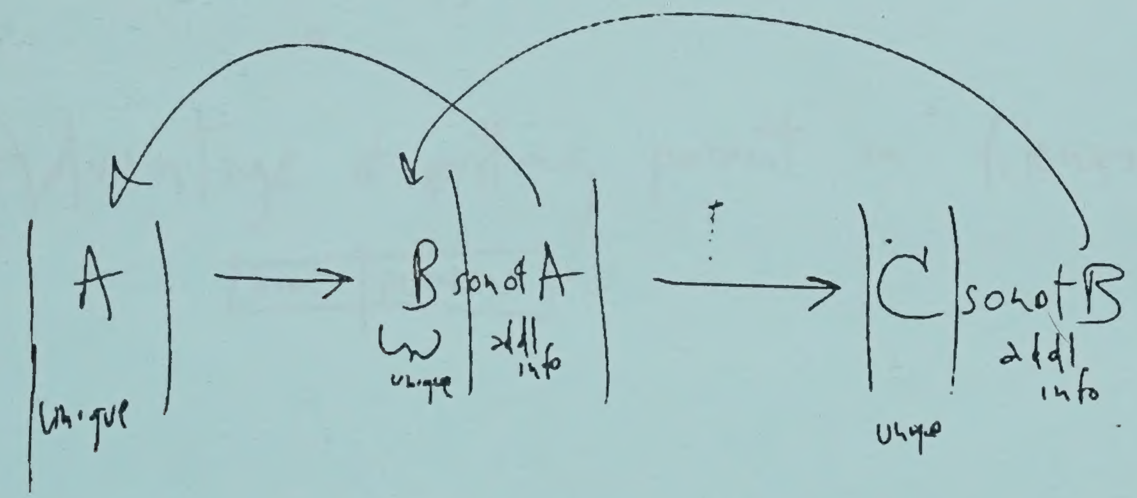
Oo's CURRENT DESIGN FOR ITEM NAME.

APR 1 8 1995


ITEM!auth!ookubo!anno!xyz!ctime! !mtime!
q.
second.
ZIP
A
AB
BC

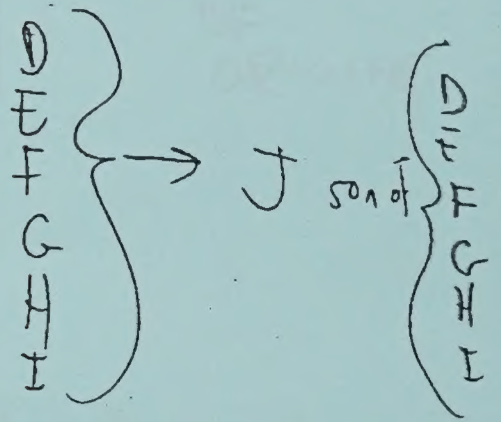
Oo: PROBLEM OF ~~EOF~~
SIZE EXPLOSION
AS LIST OF ANCESTORS
GROWS.

7. Not necessarily —


A
unique
B
son of A
unique
addl info
C
son of B
unique
addl info

CHAINBACK IS POSSIBLE
IF PARENT NAME IS UNIQUC.

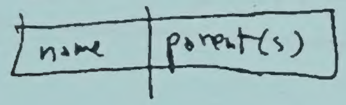
Problem:

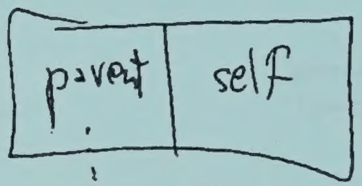

D
E
F
G
H
I
J
son of
D
E
F
G
H
I

CAN RULE IT OUT
BY FORBIDDING
n(parents ≥ ??)

APR 18 1995

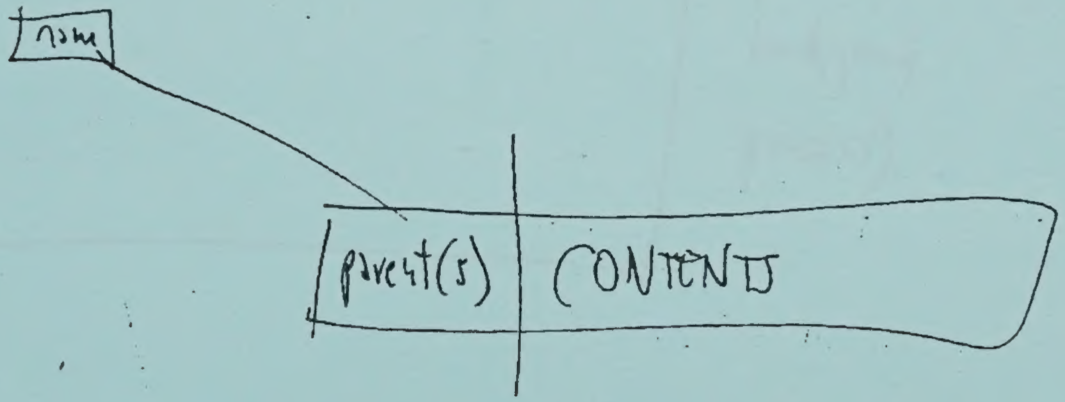
Advantage of putting parent in filename:


name
parent(s)


parent
self

QUICK VIEWING
OF
ORIGINS.

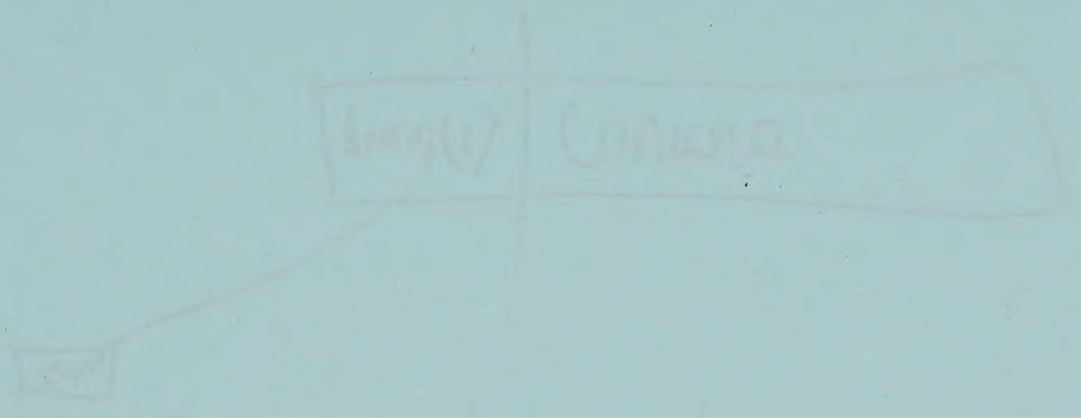
Alternative: parent(s) in FIRST FIELD OF FILE.


name
parent(s)
CONTENTS

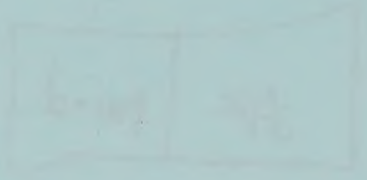
Disadvantage:
ADDITIONAL ACCESS STEP

BUT: LONG-NAMES
SLOW SEARCH PROCESS.

[illegible]



Alternative: [illegible]



[illegible]

Alternative [illegible]

APR 1 8 1995

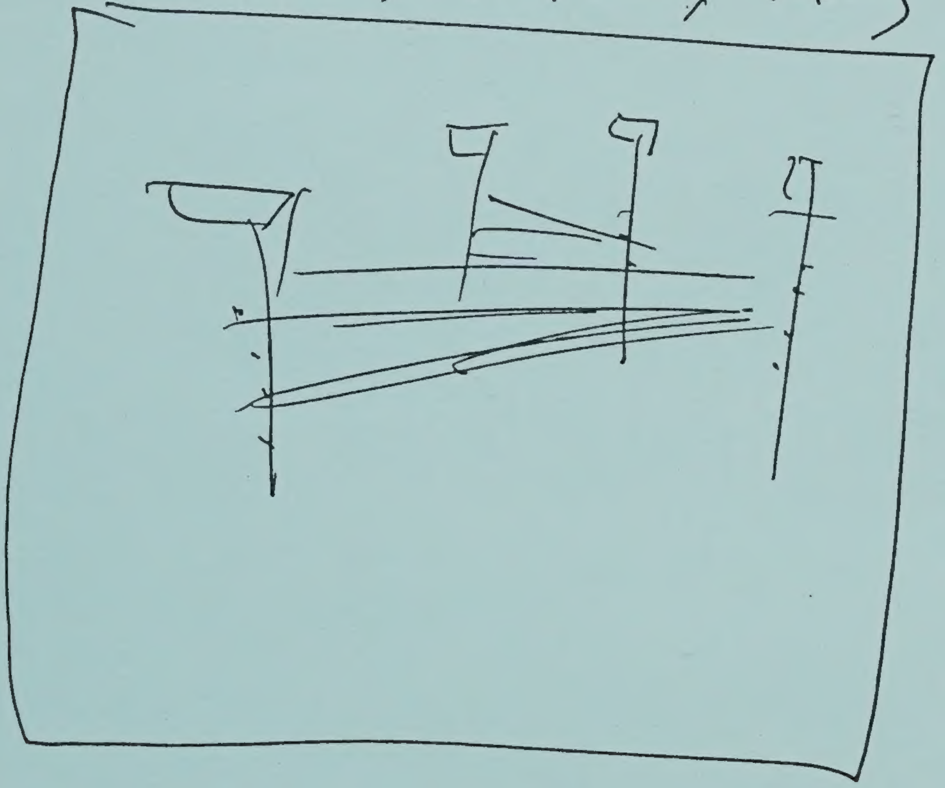
4

POSSIBLY SIMPLIFIED DESIGN

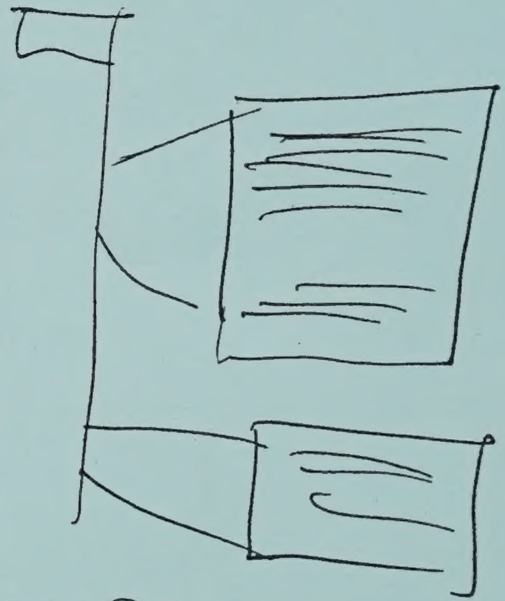
for Project 2 —

NOT HAVE PAD FOR EVERY ZIP OR ITEM —

BACKGROUND PICTURE, showing HUNDREDS OF CONNECTIONS —



(Redrawn as parallel background process)



WINGS COME UP as Superimposed pads, where interaction is.

MTG APR 15 1995 0

| 4T, TN.

1. Xanadu News:
NEW DEFINITION OF TRANSCLUSION (tentative).

2. INTELLIGENTPAD ISSUES. What's needed to move it forward.

3. The problem of UNDERSTANDING the MVC STRUCTURE of IntelligentPad.

12. IntelligentPad's 'SAVE FORMAT' —
13. Better name? WHAT IT IS.

16. SGML-like SAVE FORMAT —
17. And its problems for Xanadu.

Xanadu News:

MRG APR 1 5 1995

1

New def. of transclusion:

EMBEDDED
VIRTUAL INCLUSION

with
ORIGINAL CONTEXT
VIRTUALLY PRESENT.

MTG APR 15 1995

INTELLIGENTPAD ISSUES.

IntelligetPad is The kernel.
Analogy: Unix in 1970.

0. EXPLANATION & DOCUMENTATION

1. DEFINITION OF USER DOMAINS AND MESSAGE SETS & UTILITIES & APIs
   WHAT ARE MAIN DEFINITIONS OF USER DOMAIN?

2. MARKETING

3. MARKET PREPARATION = BUSINESS SEEDING

Educators
Schools

Developers Systems Integrators
Marketers
Remarketers
Consultants
Service Bureaus

[illegible]

[illegible]

[illegible]

[illegible]

INTERNATIONAL ISSUES [illegible]

5

MTG APR 1 5 1995 3

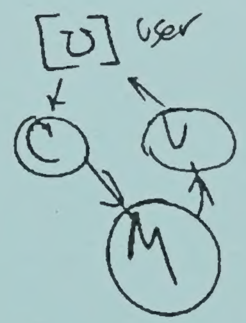
The Problem of understanding IP;

Model - View - Controller Structure —

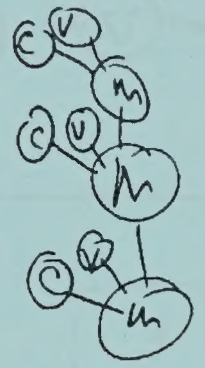
HARD TO UNDERSTAND.

MVC STRUCTURE.

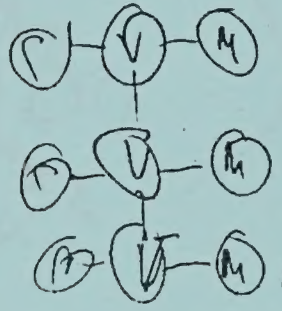
I understand this:



This is what seems obvious:



IP



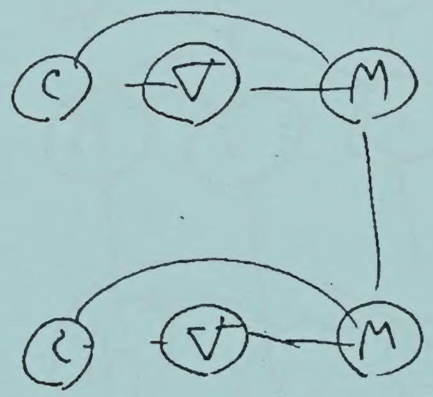
Why??

But I don't understand the IP structure.

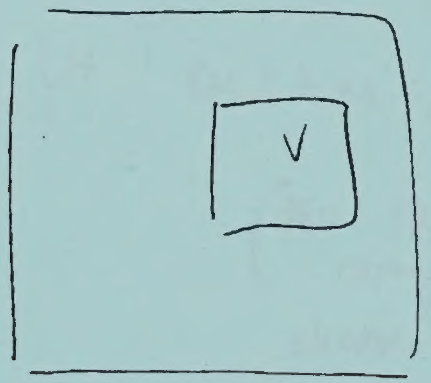
MTG APR 1 5 1995

T.

This is what seems obvious —



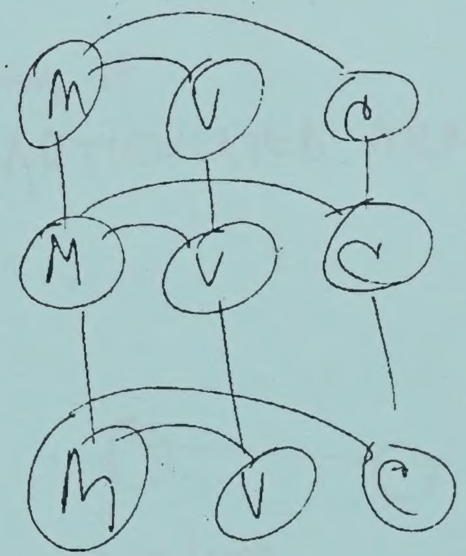
YT's answer —



YT: Event detector (C) shd be close to V.

MTG APR 1 5 1995

7. What about?



Ht. OCCAM'S RAZOR.

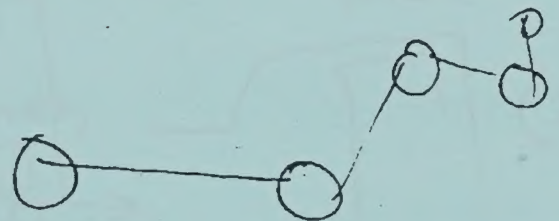
(this is too
complex,
choose a simpler.)

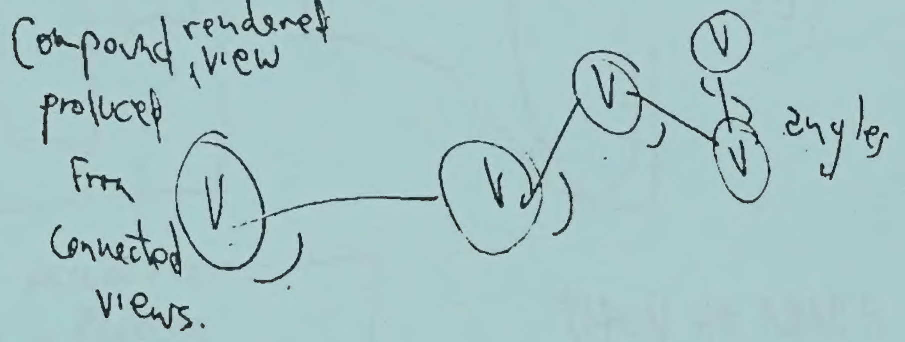
MTG APR 15 1995

7

I understand This
connected view; with V the center:

Rendering of
ARTICULATED ARM OF PUPPET




Compound rendered view
produced
from
connected
views.
V
V
V
V
V
angles

[illegible]

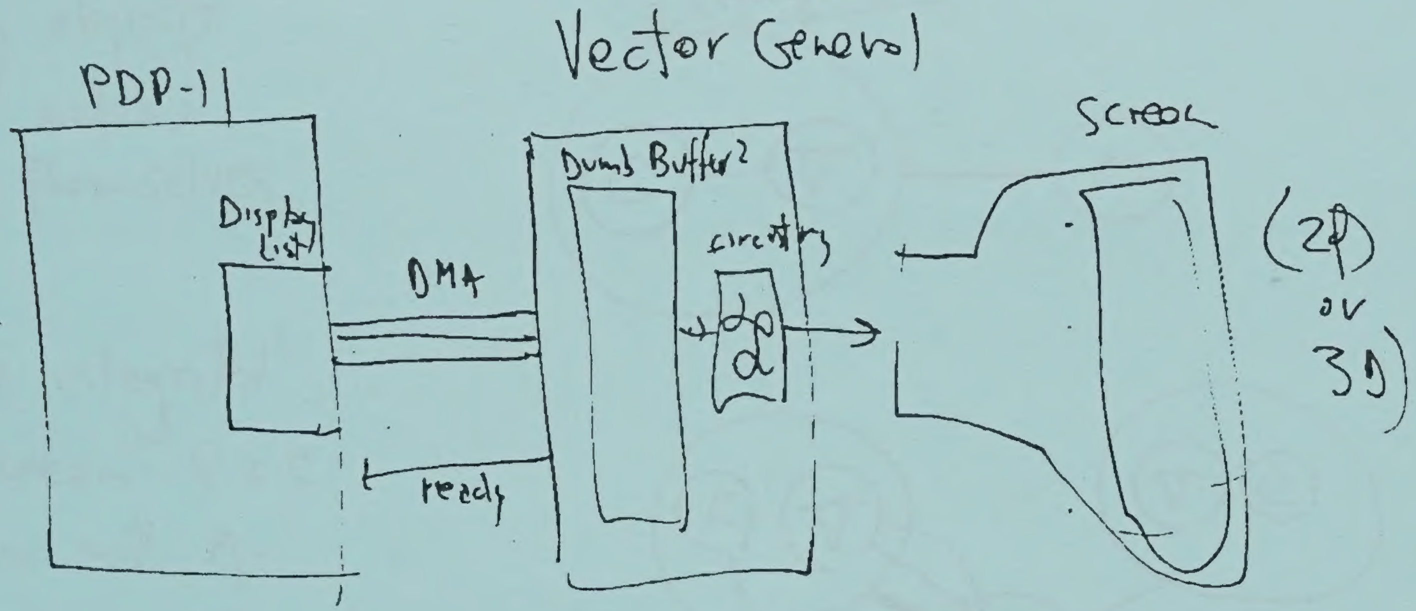
[illegible]

MVG APR 1 5 1995 8

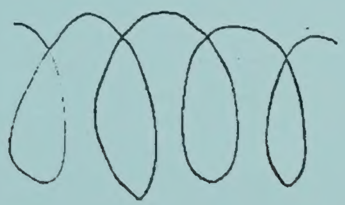
T. Also,
here's an

EXAMPLE of V Taking over:

DeFanti's GRASS language.


Vector General
PDP-11
Display List
DMA
ready
Dumb Buffer?
circuitry
Screen
(2D or 3D)

First defanti language
CYCLED
THE
DISPLAY

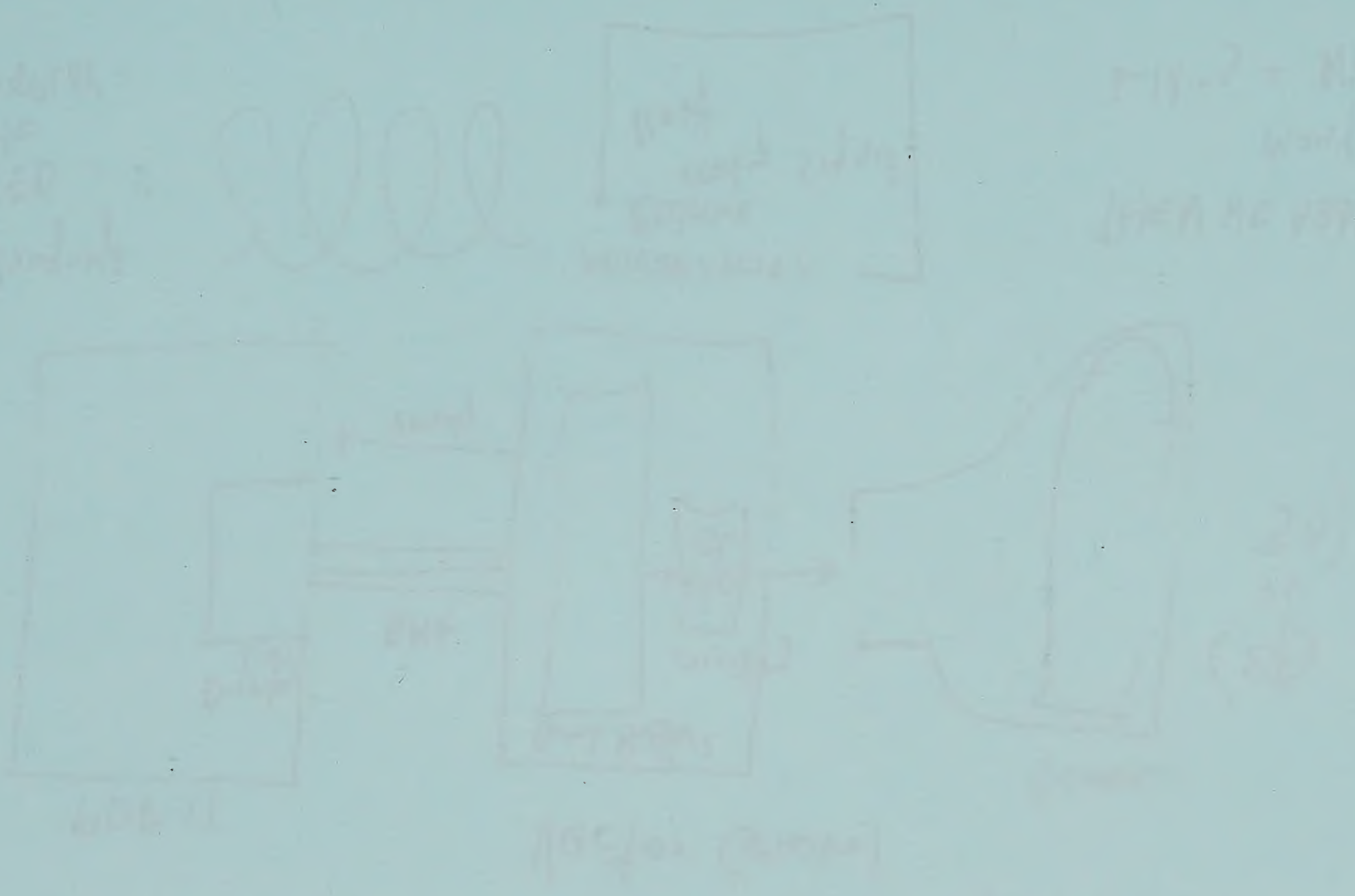


DISPLAY CYCLE:
Receive
ready signal
Reset

THEN HE ADDED
Many routines...
building a Nested interpretive
rotation
language.

[illegible]

[illegible] WHEN WE USED



[illegible]

ENSURE 4 A [illegible]

[illegible]

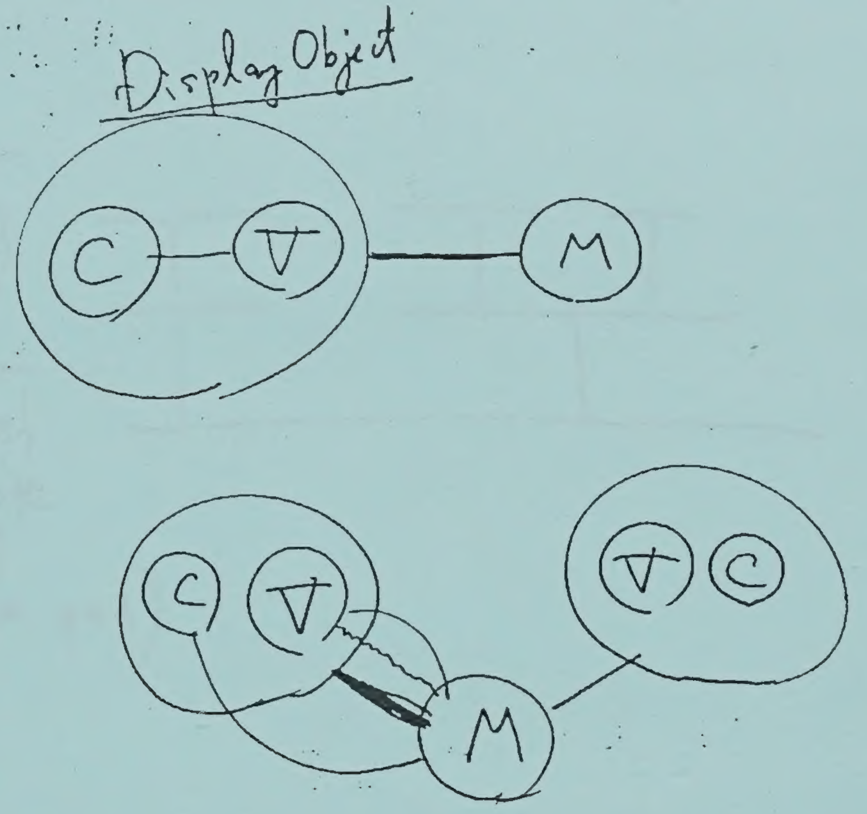
8

MYG APR 1 5 1995 9

YT:

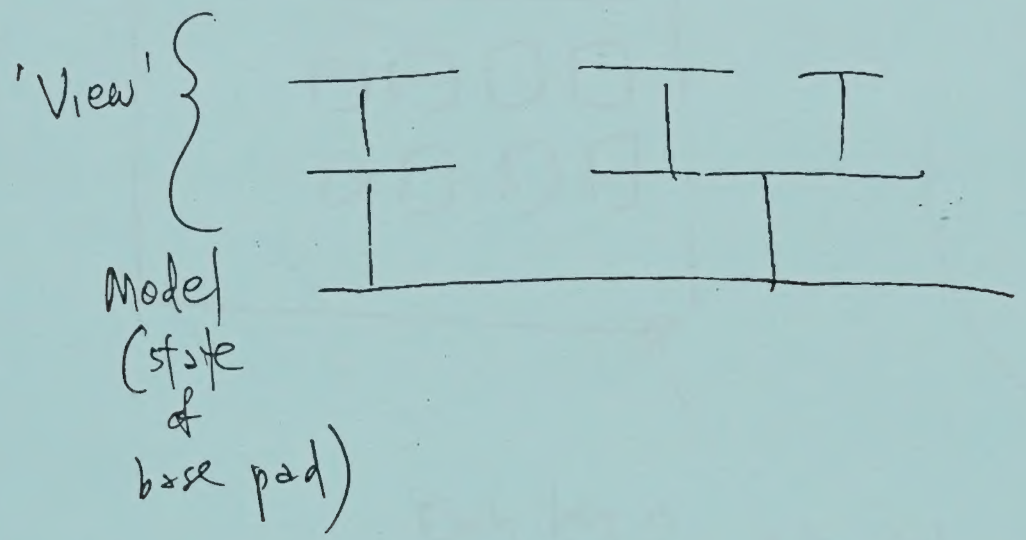
Display objects
are modules
in themselves,

often
more integrated
between V & C
than with M.


Display Object
C
V
M
C
V
M
V
C

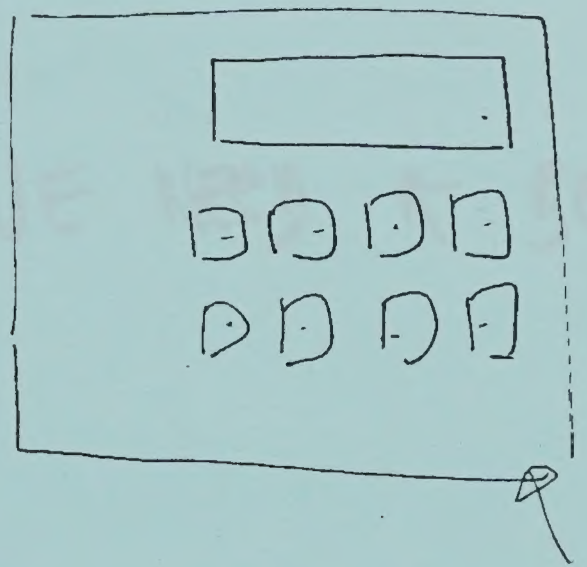
Shared copy
or
a pad

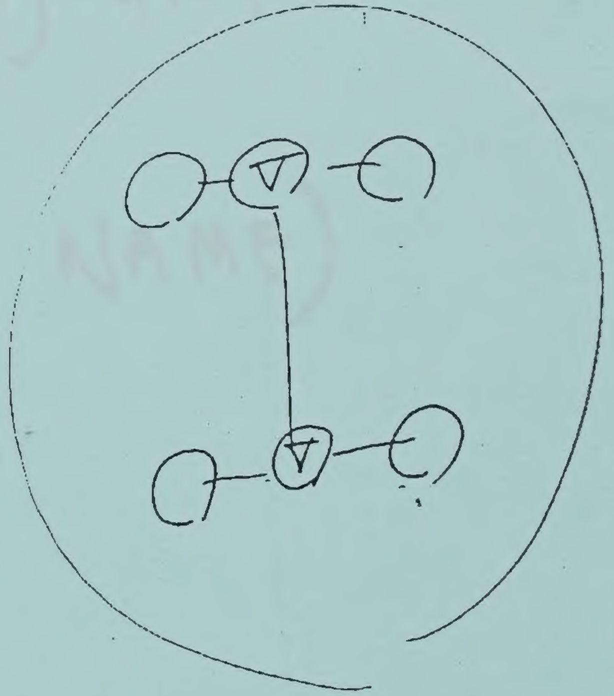
YT:


'View'
Model
(state
of
base pad)

MTG APR 15 1985

4. Program to simulate Calculator —





Each key is
part of the controller (C),

but in a sense
the whole calculator
is a View.

[illegible]

[illegible]

MTG APR 15 1995 12

'SAVE FORMATS' for IntelligentPad —

(WE NEED A BETTER NAME)

MTG APR 1 5 1995 13

COMMUNICATION FORMAT?

"~~SAVE FORMAT~~"

EXCHANGE
TRANSPORTATION
NETWORK
} FORMAT

MYG APR 1 5 1995

NETWORK FORMATS (save formats) (different for each version) → assumes a common pad library at target site.

Also use: TIME & PLACE OF OBJECT'S BIRTH as Object ID.

PAD

PAD APPEARANCE

COMPOSITE PAD
nesting

⋮

Transported pad=
structured list of component pads
from standard library (library IDs)
(including necessary relational information)
Instance variable values.

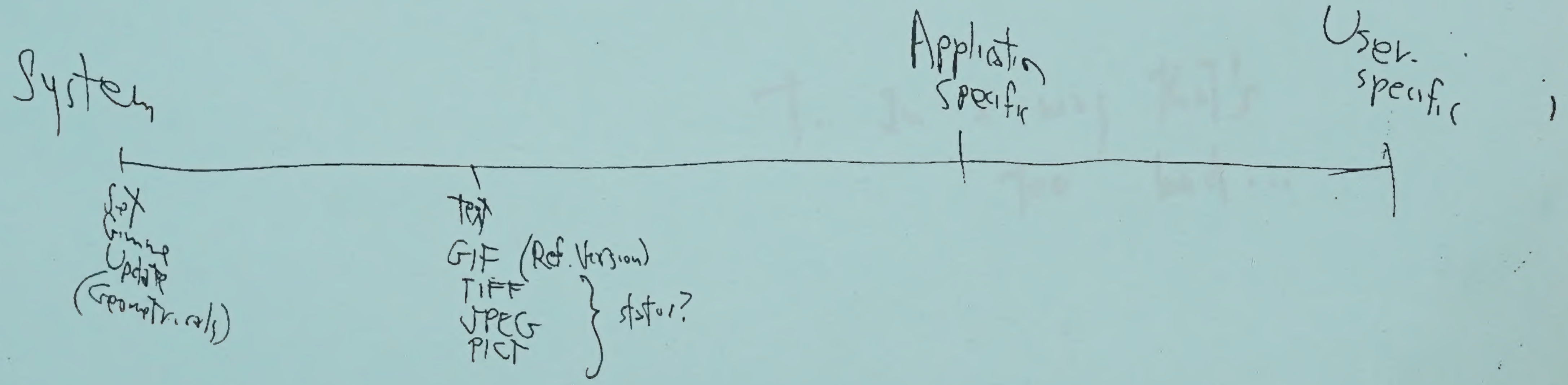
IN ASCII.

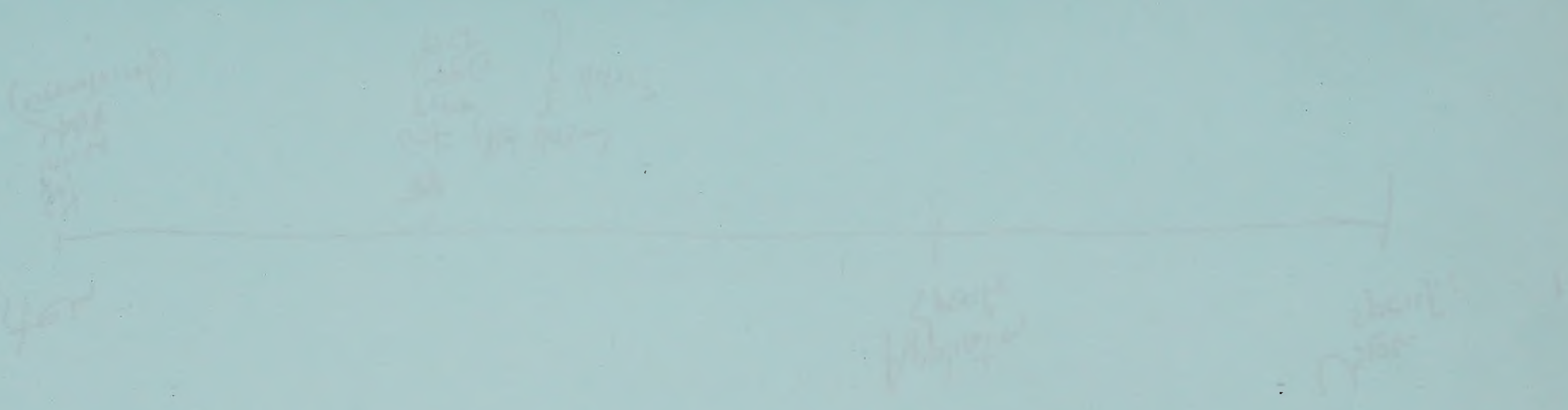
NTG APR 15 1995 15

DO WE HAVE ANY CROSS-DOMAIN SAVE/NETWORK FORMATS?

What messages & slots are most general?

Continuum —


System
Application Specific
User-specific
fax
Gimme
Update
(Geometricals)
Text
GIF (Ref. Version)
TIFF
JPEG
PICT
status?



Confucius —

Most modes of thought are very [illegible]

Do we have any cross-cultural examples?
[illegible]

RAC MAR 12 2002

12

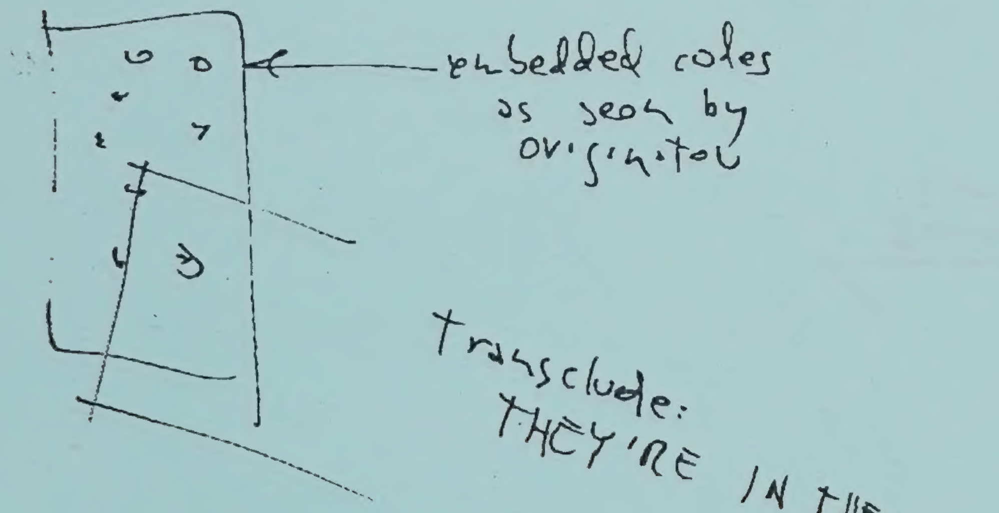
MTG APR 15 1995

Q1: SAVE/NETWORK FORMAT
SHOULD STANDARDIZE
IN A SORT OF
SGML FORMAT.

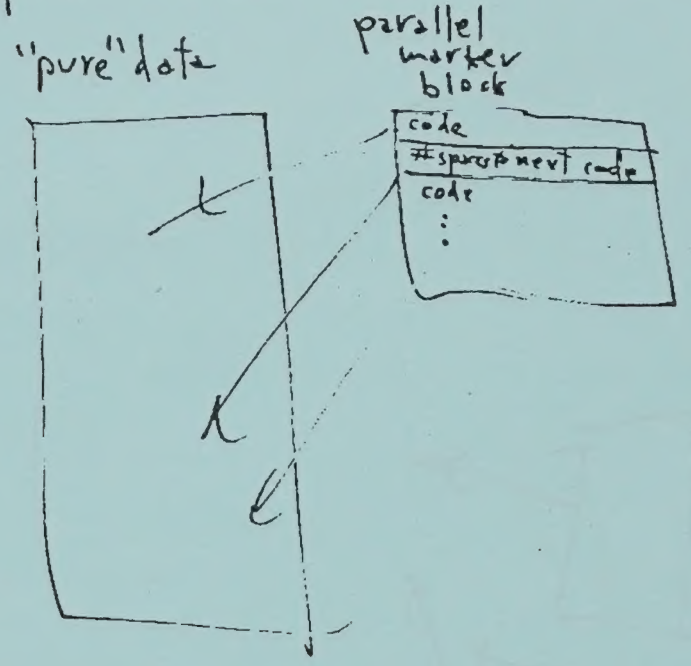
T. In a way that's
too bad...

MTG APR 15 1995

The problem with SGML.


embedded codes
as seen by
originator
transclude:
THEY'RE IN THE WAY.

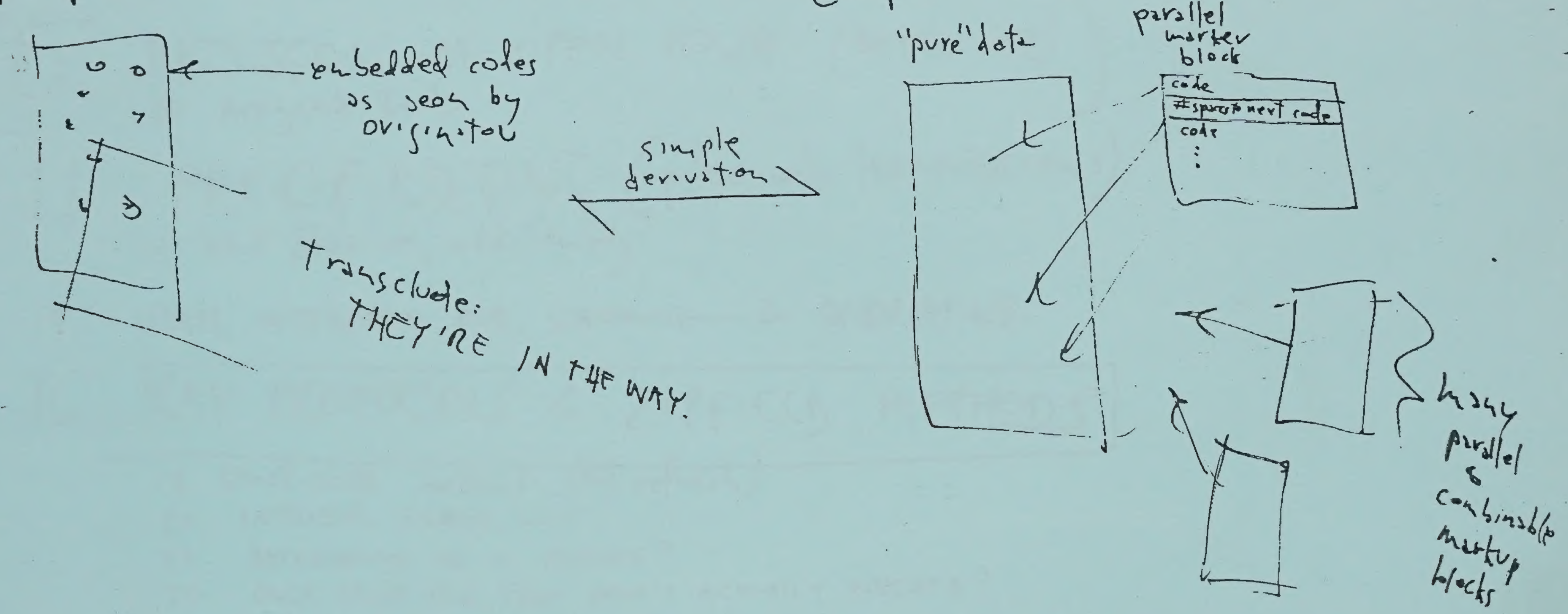
Complete solution


"pure" data
parallel
marker
block
code
#spreadsheet code
code
⋮

MTG APR 1 5 1995

The problem with SGML for Xanadu.

Complete solution


embedded codes
as seen by
originator
Transclude:
THEY'RE IN THE WAY.
simple
derivation
"pure" data
parallel
marker
block
code
#spans to next code
code
:
many
parallel
&
combinable
markup
blocks

Yt. But then there are two entities,
rather than one.

MTG MARCH 11 1995

1 PAD-MOSAIC
  2 ITS SPECIAL ADVANTAGES
  3 A HOTLIST UTILITY!

(5 DISCUSSION OF OPEN HOUSE (March 22)
  10 Assigned tasks)

11 PREZIP EDITING (piles with transclusions)
  14 What Zips are, additionally

15 USER INTERFACE FOR SCANNING — & SEARCHING

16 RAY PROTOCOLS & ZIPFIELD METHODS
  18 Small-scale method (full refresh)
  20 LARGER SCALE —
  24 BACKGROUND AS A PICTURE?
  26 ONLY SEND FOR TEXT THAT'S ACTUALLY NEEDED?
  34 PROTOCOLS FOR ITEM LISTS & RAY TUPLES

36 EXTENDING Mr. Ookubo's Seahorse Demo.

MTG MARCH 11 1995

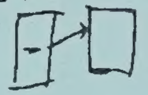
YT, TN,
Ookubo.

PAD-MOSAIC

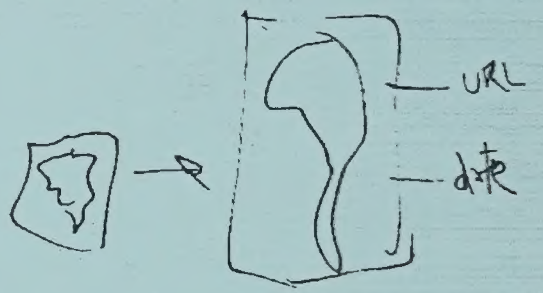
MTG MAR 1 1 1995 2

SPECIAL ADVANTAGES OF PAD-MOSAIC (IPnosis?)

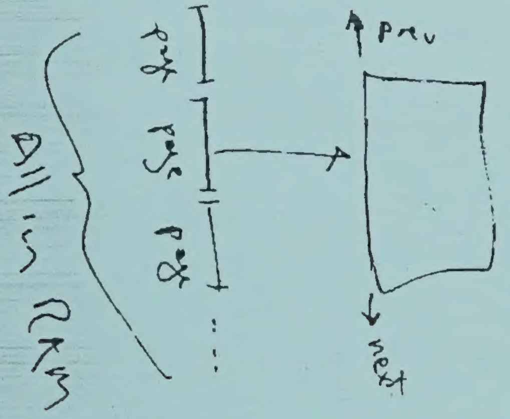
① CUSTOMIZABLE — keep your hotlists any way you want; comment them
Multiple windows, SHOW LINKS BETWEEN



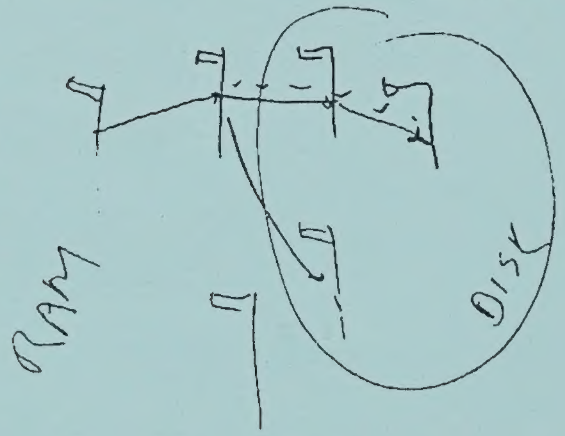
② PASTABLE, EDITABLE TEXT, RESIZABLE PICTURES that KEEP IDENTITY



③ IN MOSAIC & NETSCAPE you have LINEAR BUFFERING


page
page
page
All in RAM
prev
next

We can have



MAKE KEEPING AN OPTION!

Keep directory

Sapporo
HyperLab

MTG MARCH 11 1995 3

A HOTLIST UTILITY!

MTG MAR 1 1 1995 4

Mr. Oo suggests:

HOTLIST MANAGER done in IP.Light™ HOTMAN? HOTPAD ?

DOWNLOADABLE

<1 meg

Quick launch, once resident (does a static link among libraries)

Extend to reach our homepage - - - - - - - -> POLICY QUESTION: where's homepage? - SECURITY ISSUE

Extend with GIF saves (pasteable within pad world)

☆ CAN BE DONE WITH UNIX REFERENCE VERSION.

MTG MARCH 11 1995 **5**

Full group.

DISCUSSION OF OPEN HOUSE.

MTG MAR 1 1 1995 6

1. People arrive
PHOTOGRAPH THEM
(10-12:
put people's pictures
on pads)

10:00
12:00) Presentation

12:00
Y.T. 30 min each Project 1 1 hrs
T.N. K.O 30 min each Project 2 2.

12:00
14:00) Lunch & Discussion

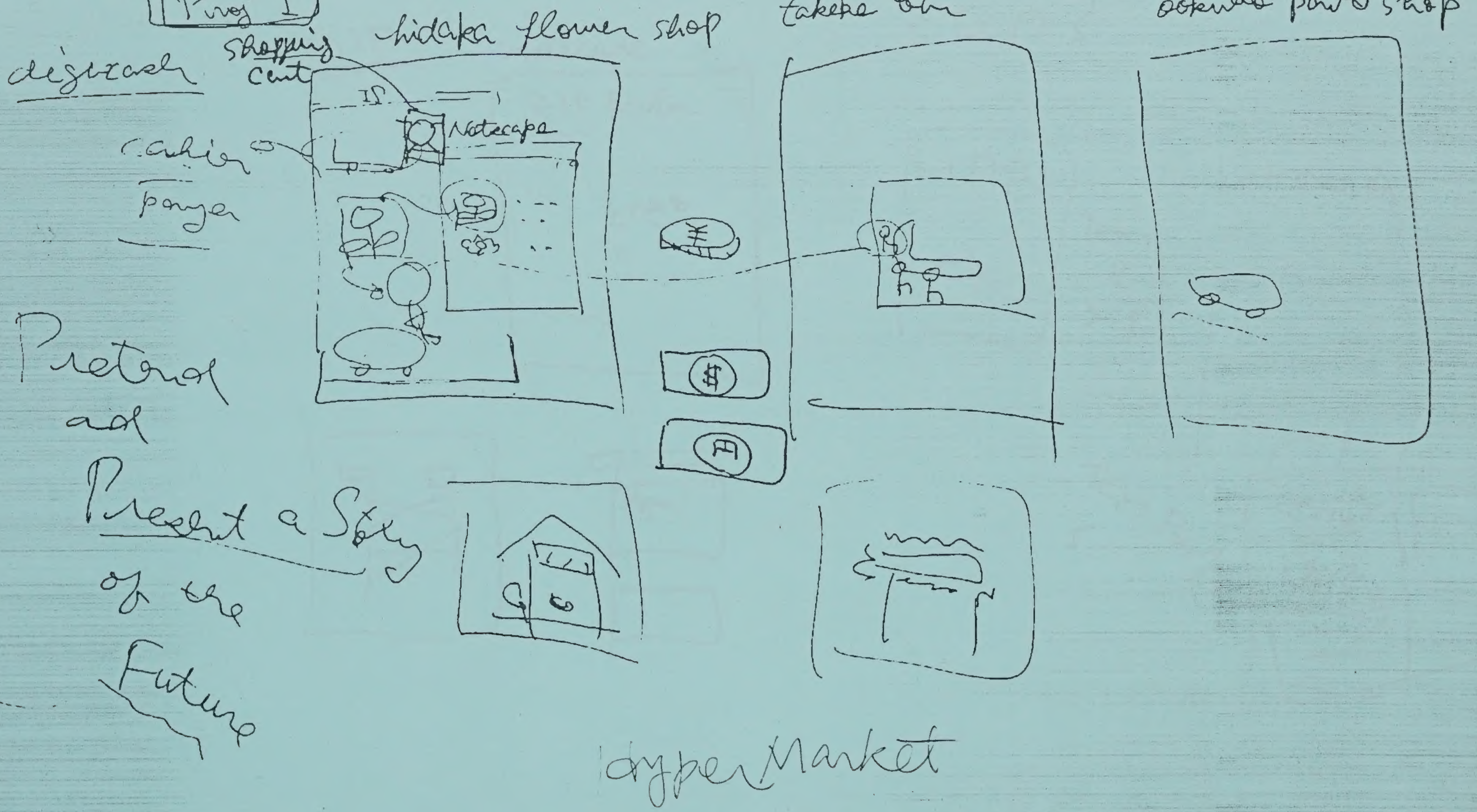
14:00
16:00)) Open House Demonstrations

16:00
|) Free Discussion
&
Party

MTG MAR 1 1 1995

(Proj 1)

Pretend and Present a Story of the Future

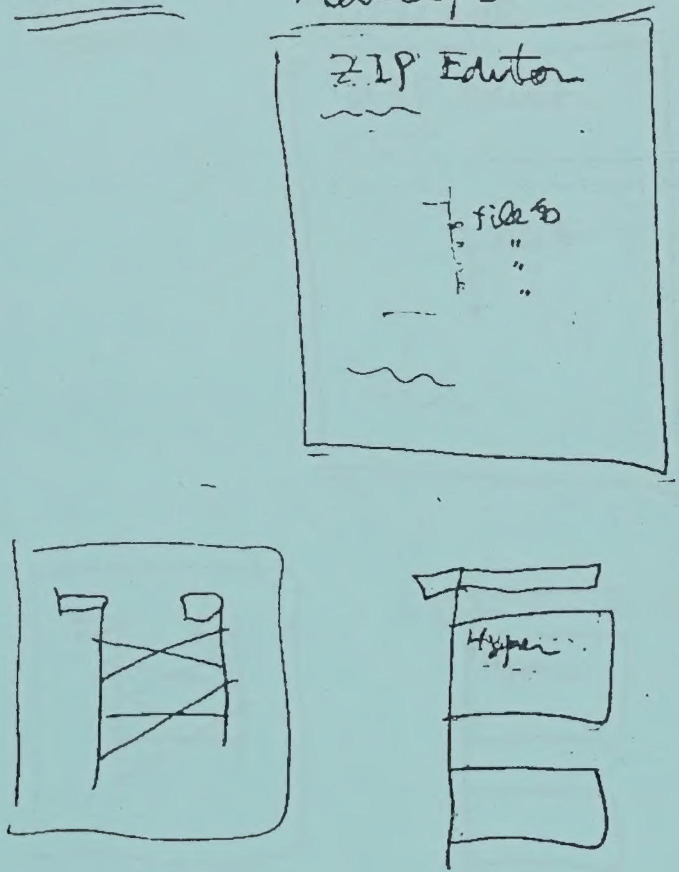

digicash
shopping cent
cashier
pager
hidaka flower shop
takeba bar
ookubo photo shop
IS
Netscape
¥
$
円
HyperMarket

MTC MAR 1 1 1995

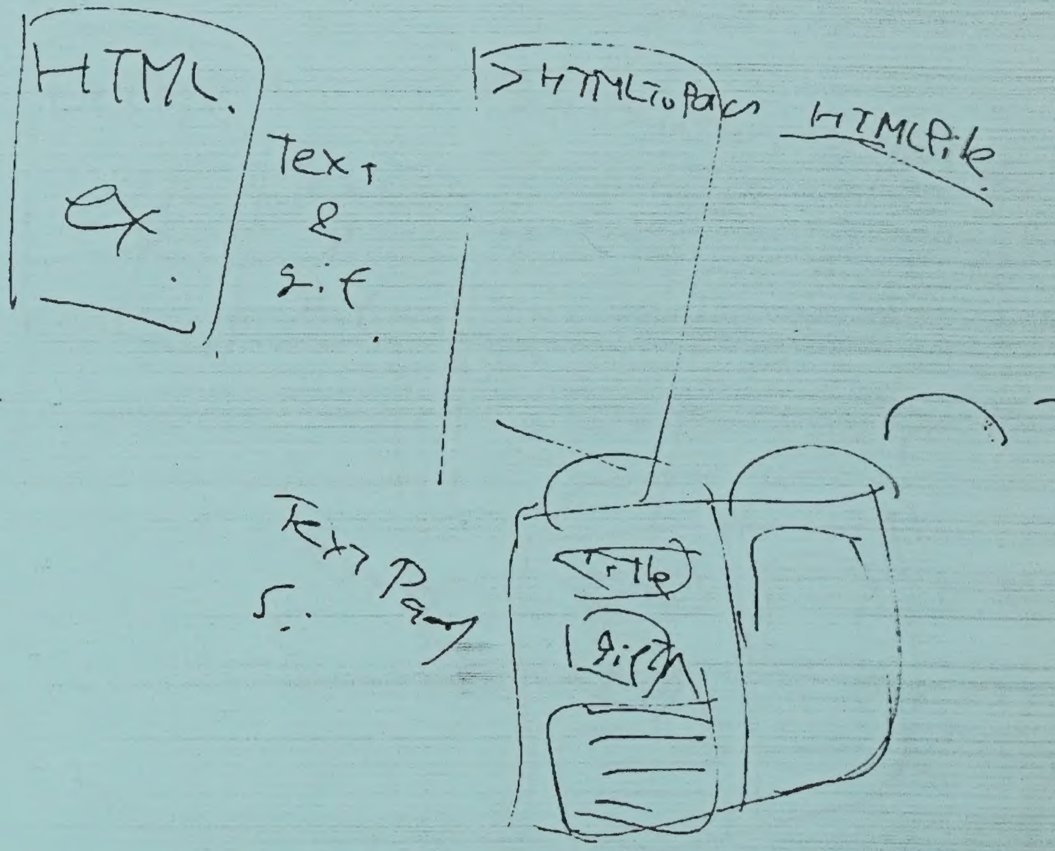
8

GIF

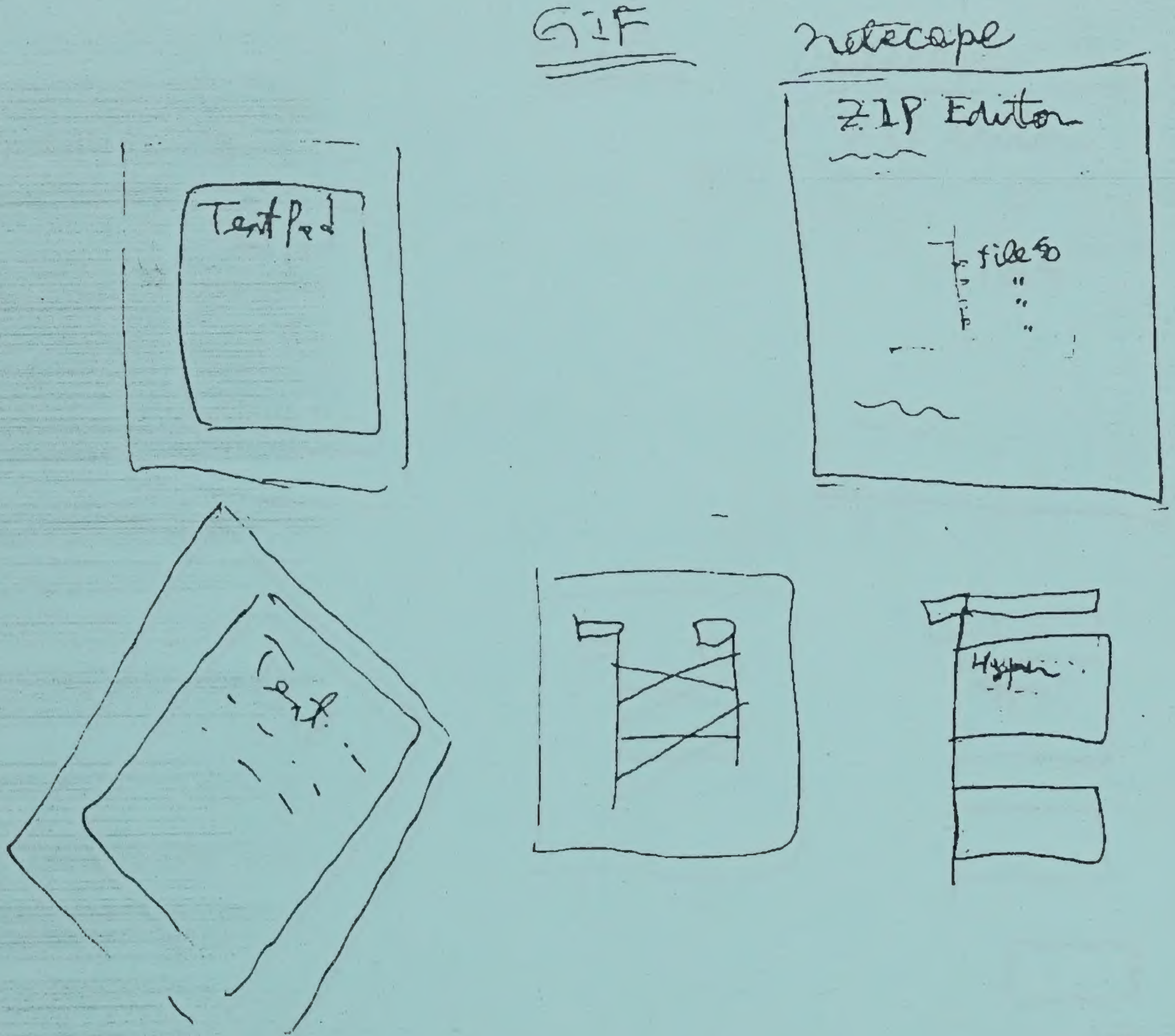
netecape


ZIP Editor
file
Hyper

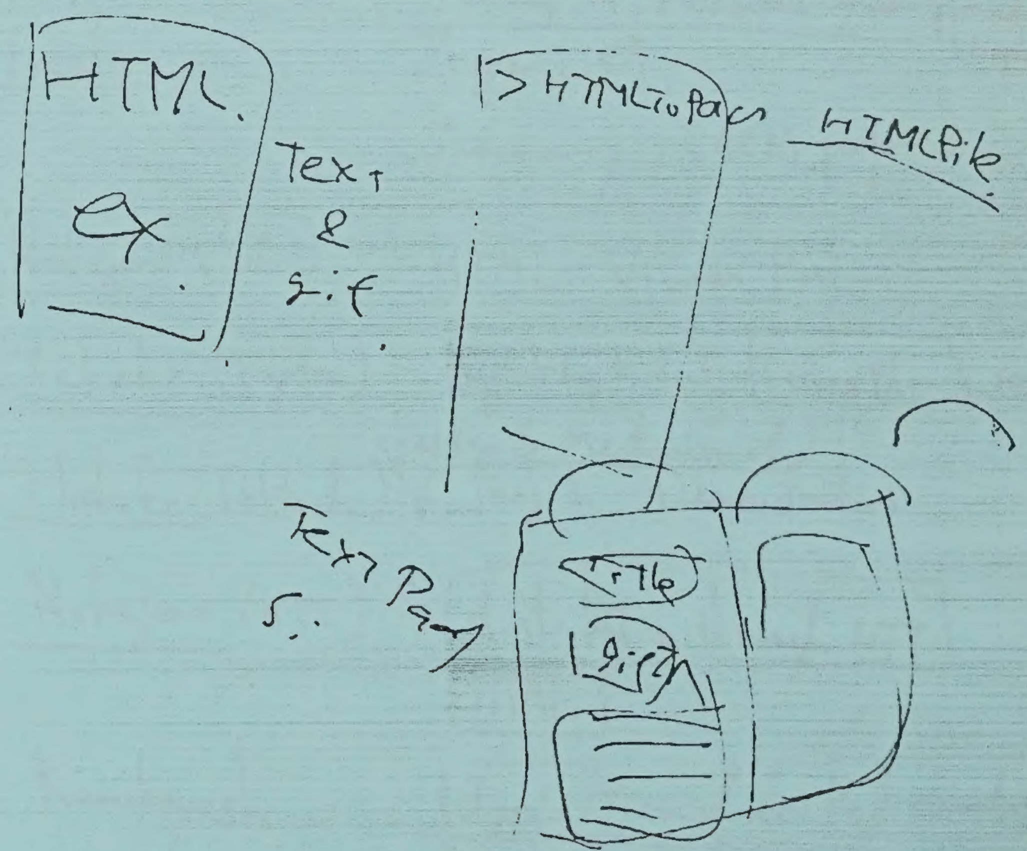
STep 3


HTML.
Text & gif
> HTMLToPage
HTMLPile
Text Page
Title
gif

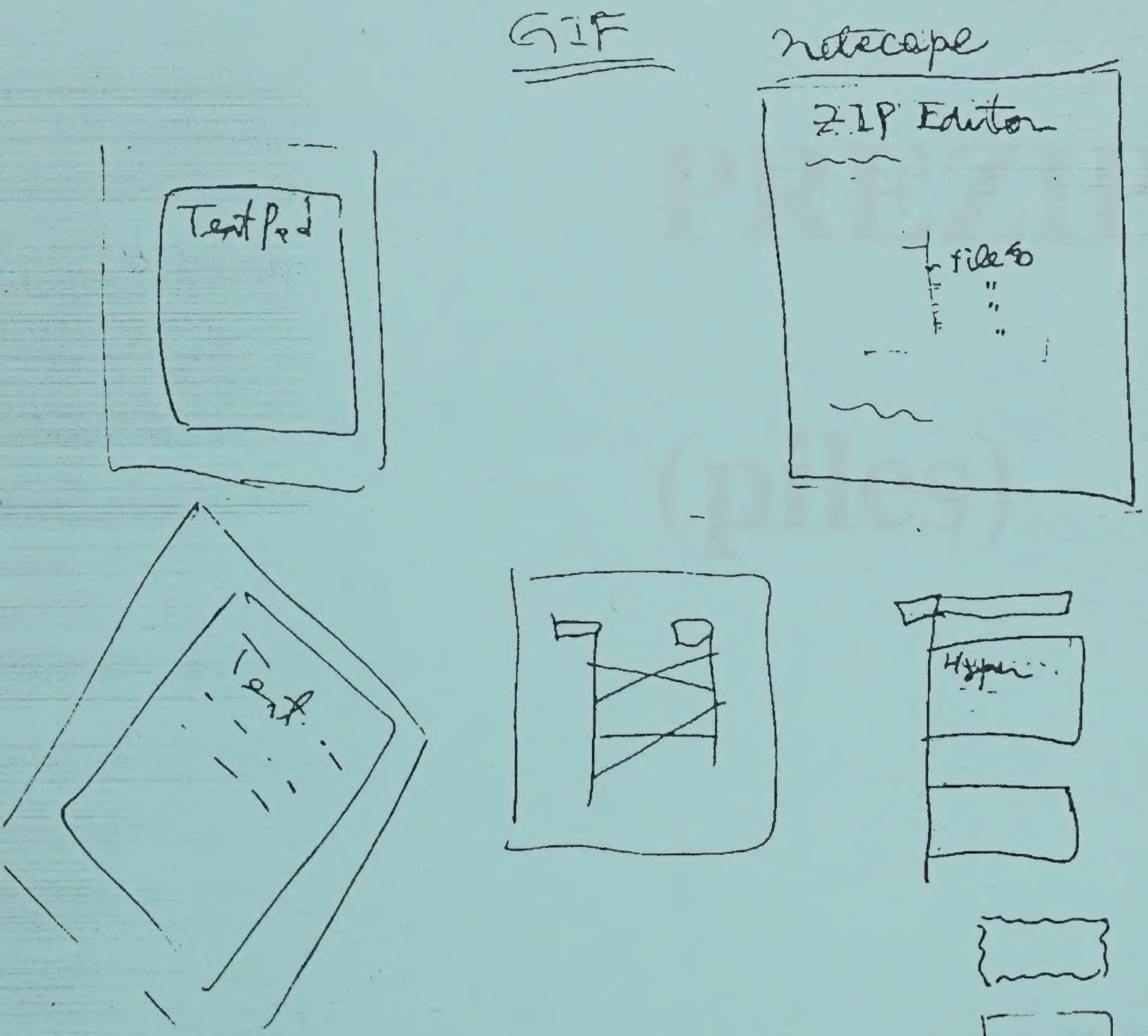
MTG MAR 1 1 1995 9


GIF
netscape
TextPad
ZIP Edition
file 50
Text
Hyper

STeP 3


HTML.
Text
&
gif.
> HTMLtoPage
HTMLPik
Text Page
g.
Title
gif

MTG MAR 1 1 1995 JO



GIF
netscape
TextPad
ZIP Editor
file 80
Text
Hyper

Ookubo	Outline of Zip Editor Survey on Payment Systems (Minety Mail Cap Explanat
Ted	Zipper List, Summary (ACM paper)
Nakajima (Fuji Xerox)	HTML Viewer Pad
Takebe (Fujitsu)	Proj. Step 1, 2, 3, Future Plan. (10 pag
Hidaka (Hitachi)	Outline & Mechanism of Proj 1. Demonstration
Nakajima (NTT)	distribution through NTT {HTML}
Kamibayashi	{User's Manual for Pad developme Super Distribution
Marlene	Opinion & Suggestion on Hyper

{ } Preliminary

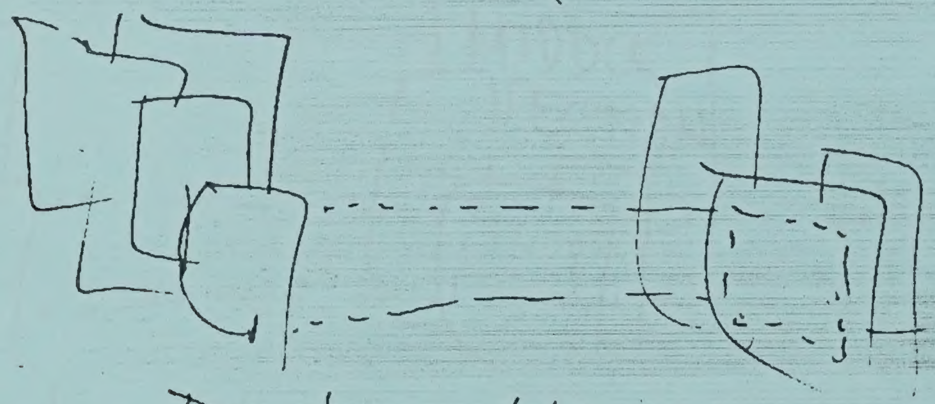
▭ Next Phase

PREZIP EDITING

(piles)

MTC MAR 1 1 1995

SIMPLIFIED ZIP EDITING (Transclusion without Zips)

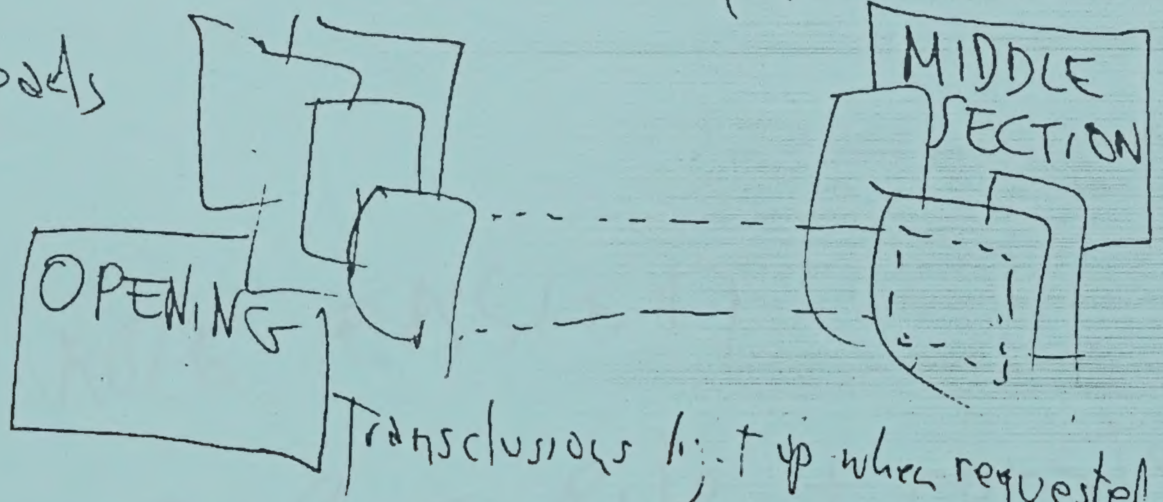


Transclusions light up when requested

MTG MAR 1 1 1995 13

SIMPLIFIED ZIP EDITING (Transclusion without Zips)

Item pads


OPENING
MIDDLE SECTION

Transclusions lit up when requested

MTG MAR 11 1995 14

PILES ARE EASIER

ZIP = pile + constraints
views
browsing methods
⋮

MTG MAR 1 1 1995 15

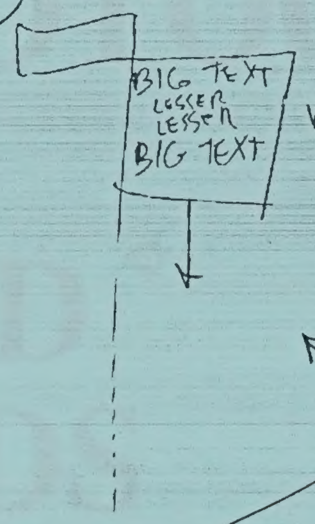
YT asks:
What
user
interface
for
scanning
&
searching?

T. Answers —

① PICE INTERFACE:
Step through items
→ top-to-bottom
left-to-right

THEY BECOME VISIBLE,
MARKABLE

②


BIG TEXT
LESSER
LESSER
BIG TEXT

WING
scrolls
down
the pole

MULTI-MARKING
as on Mac

Mark item & move on

Sapporo
HyperLab

MfG MARCH 11 1995 **16**

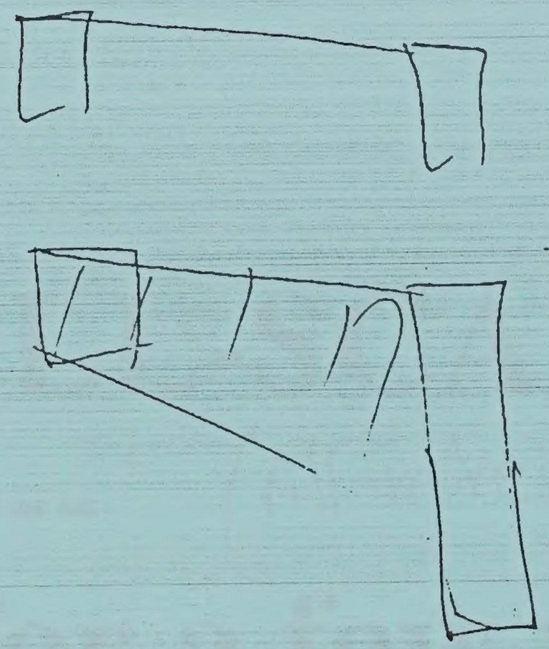
ΨΓ, ΓN,
Otsubo, Hidaka.

RAY PROTOCOLS
&
ZIPFIELD
METHODS

MTG MAR 1 1 1995 17

What is the

RAY PROTOCOL?



And how shall it relate to

Item Storage,
Pad Structure,
Slot Structure,
Refresh?

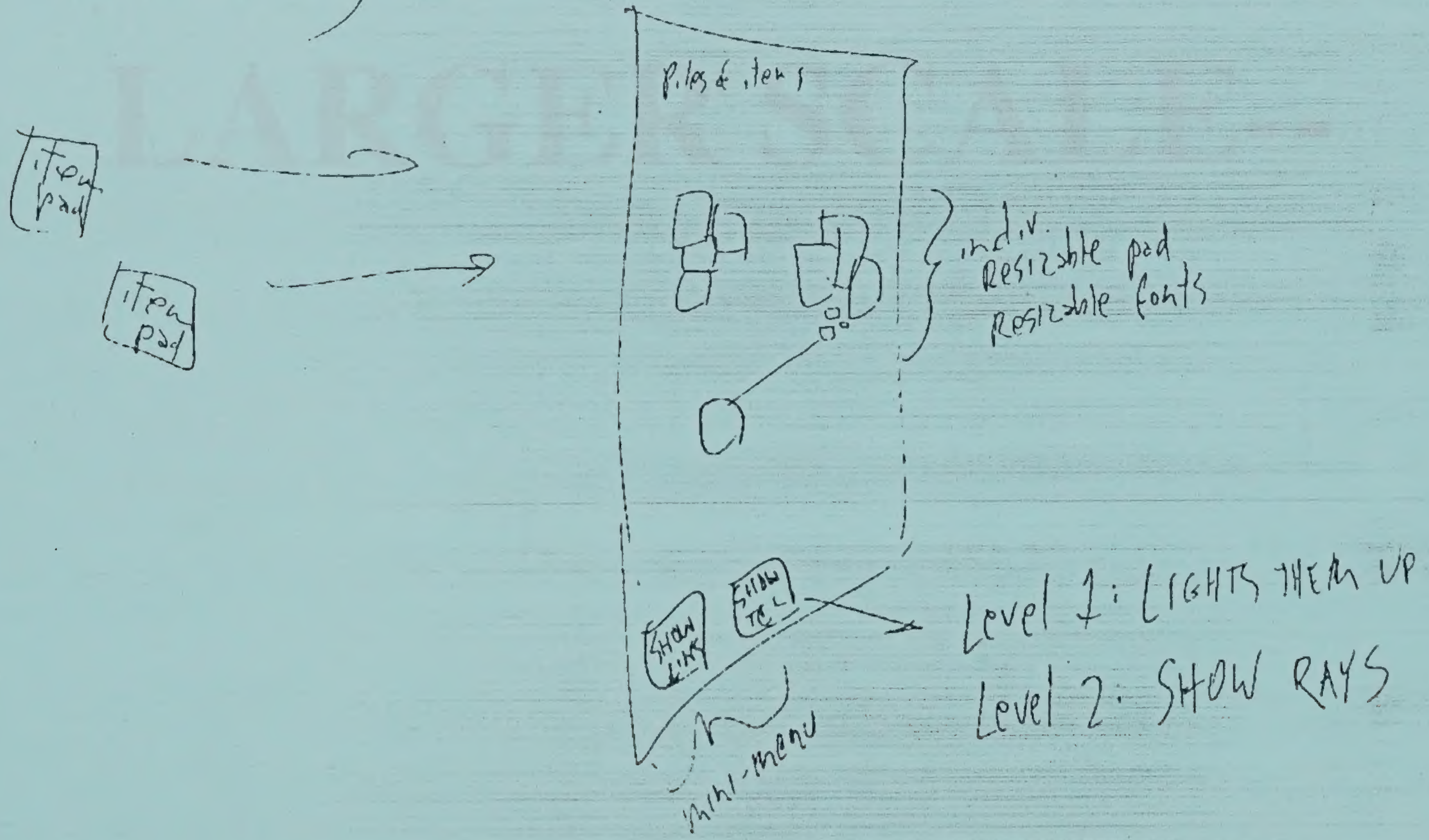
THE SMALL-SCALE METHOD--

(full refresh)

sufficient for a few pads on screen,
maybe a few hundred--

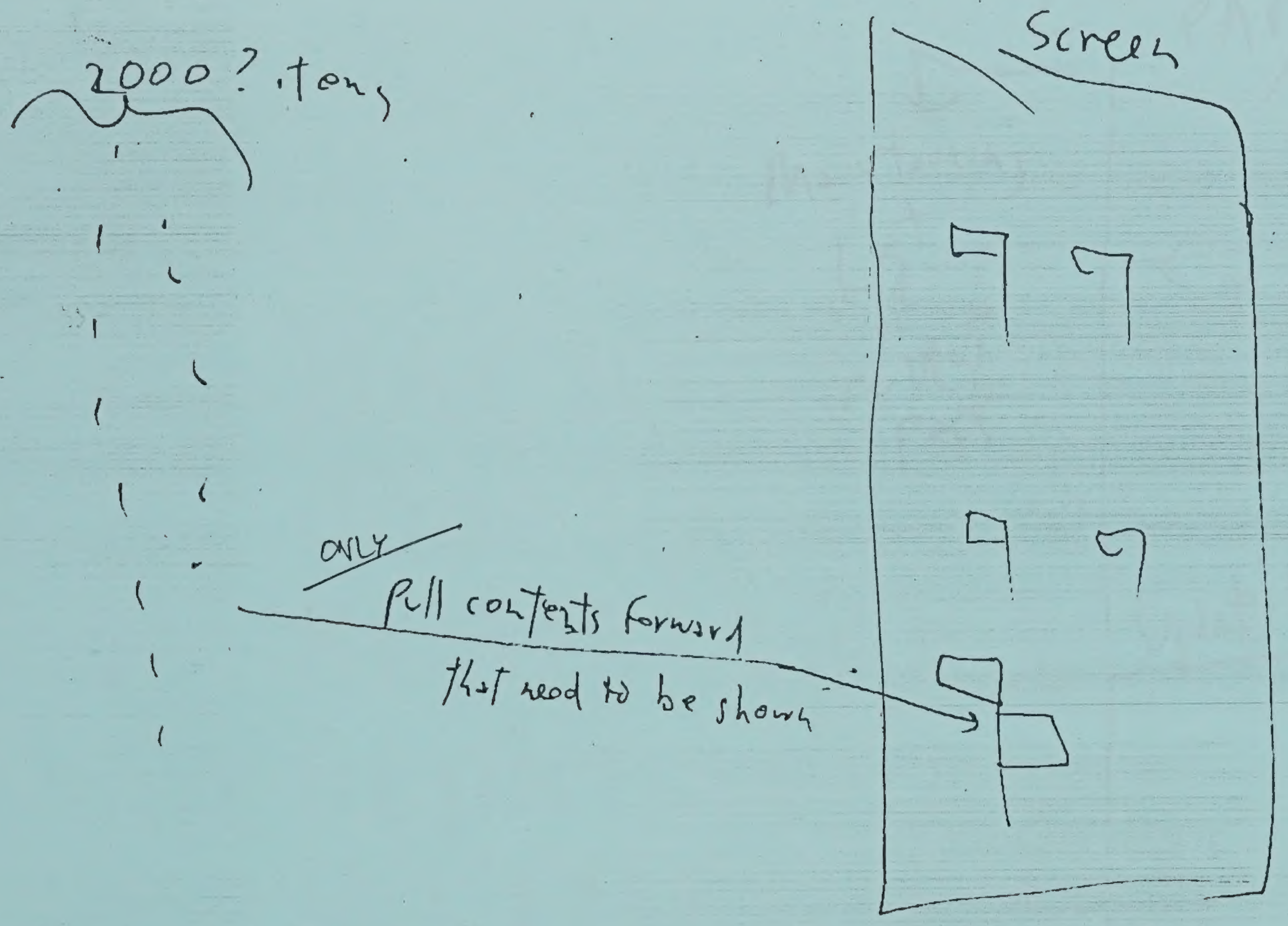
MGS MAR 1 1 1995 19

OBVIOUS SMALL-SCALE METHOD (< 500 items?
(PREZIP VERSION ←IML) < 100 items?)

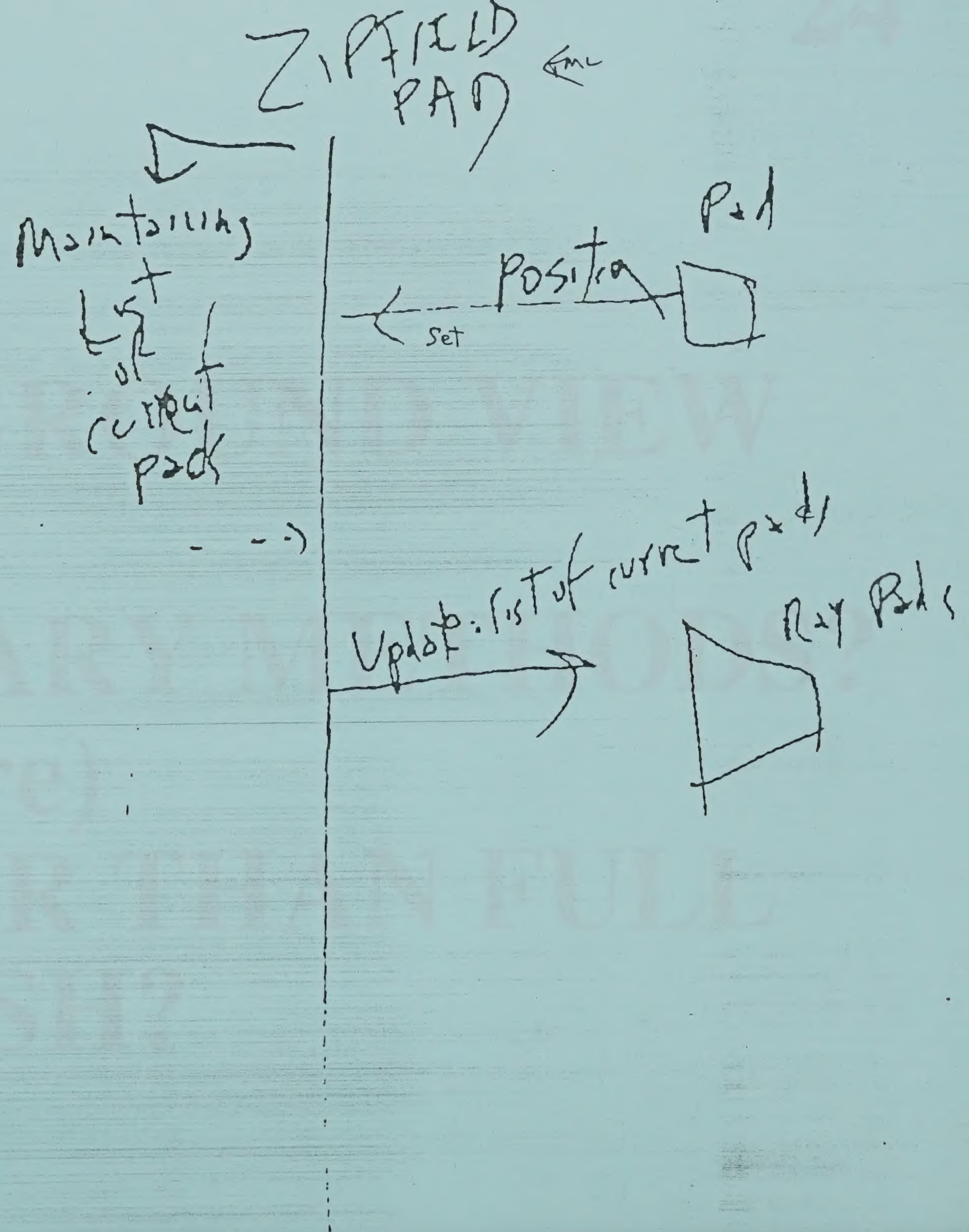

item pad
item pad
piles & items
indiv.
Resizable pad
Resizable fonts
SHOW LINK
SHOW TCL
mini-menu
Level 1: LIGHTS THEM UP
Level 2: SHOW RAYS

LARGER SCALE--

MTG MAR 1 1 1995 22.


2000? items
ONLY
Pull contents forward that need to be shown
Screen

MTG MAR 1 1 1995 23


ZIPFIELD PAD
EML
Maintaining list of current pads
set
Position
Pad
Update: list of current pads
New Pads

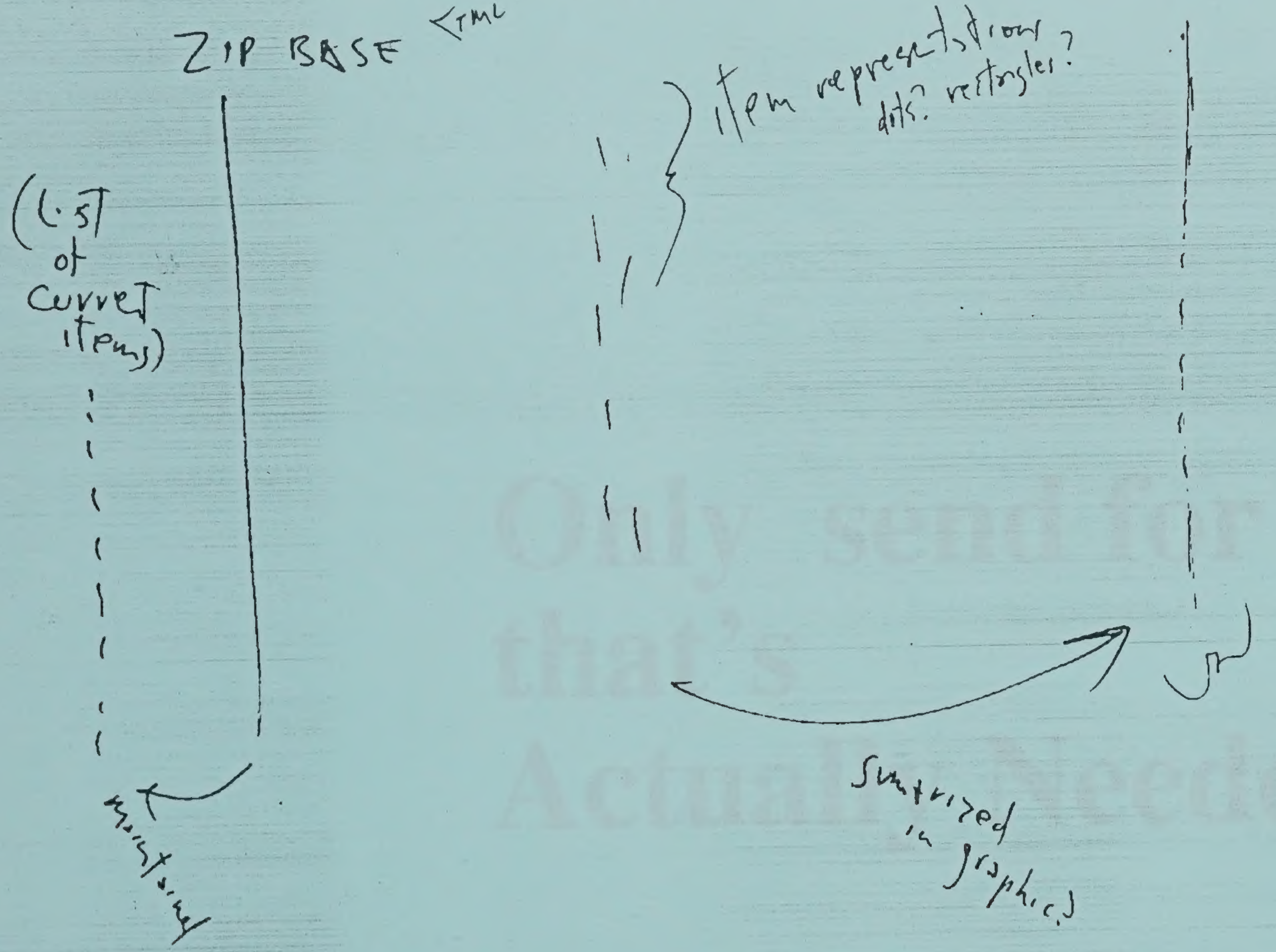
BACKGROUND VIEW
done by
SUMMARY METHODS?
(a picture)
RATHER THAN FULL
REFRESH?

MAG

# BACKGROUND VIEW
done by
SUMMARY METHODS?
(a picture)
RATHER THAN FULL
REFRESH?

MTG MAR 11 1995

25


ZIP BASE ← TML
(list of current items)
item representations? dots? rectangles?
Mistored
Summarized in graphics

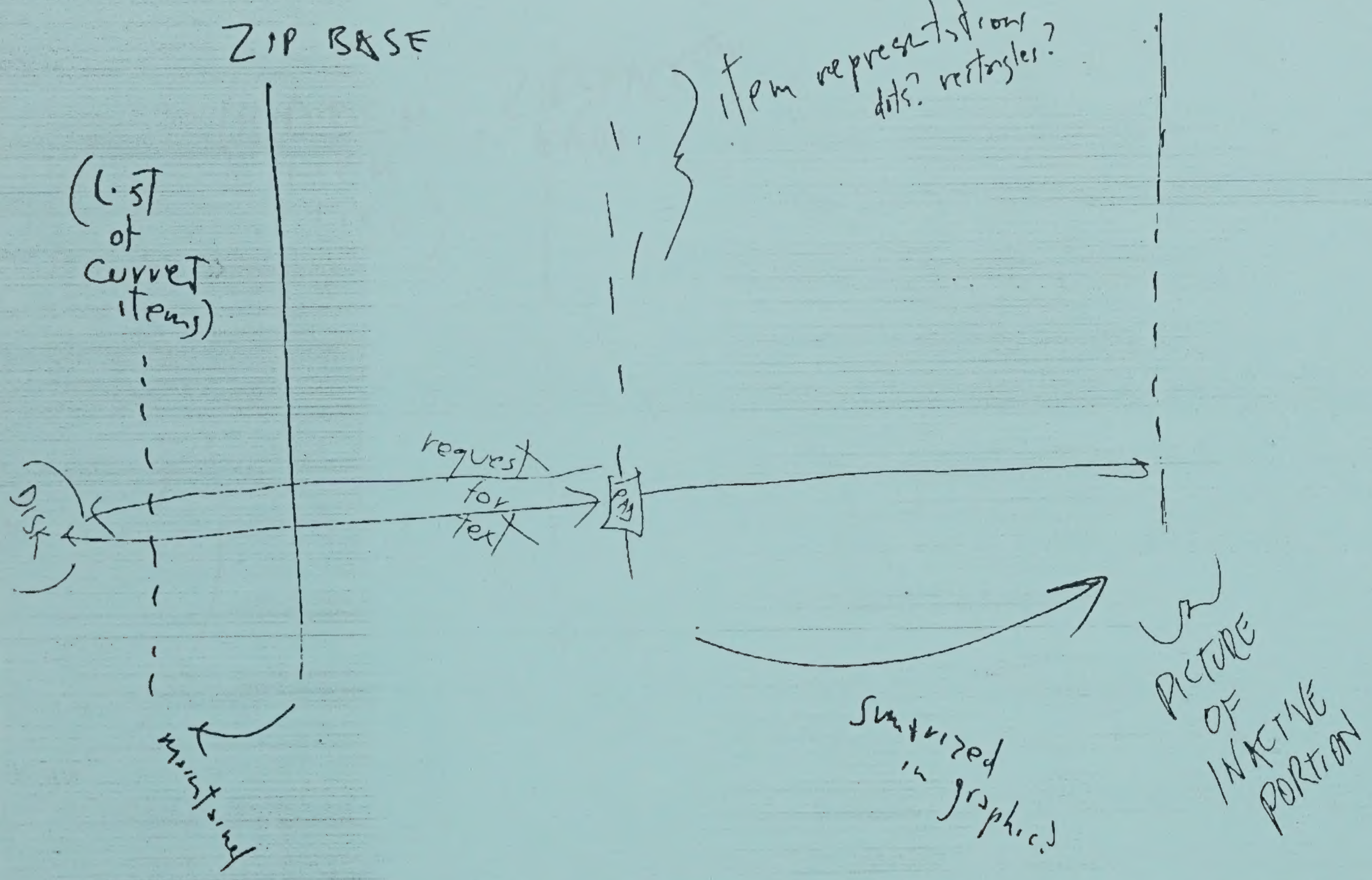
Only send for the text that's Actually Needed?

MtG MARCH 11 1995

Only send for the text that's Actually Needed?

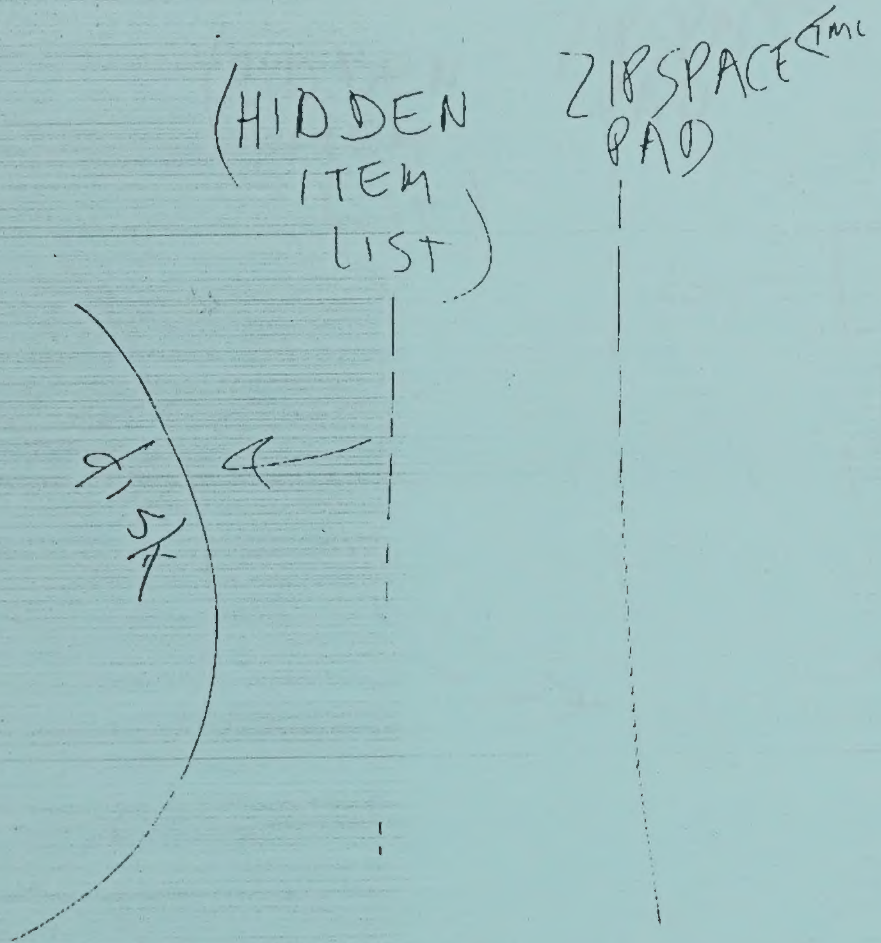
MTG MAR 1 1 1995 27

VIRTUAL TEXT MANAGEMENT
FOR
MASSIVE
PAD REPRESENTATION
?

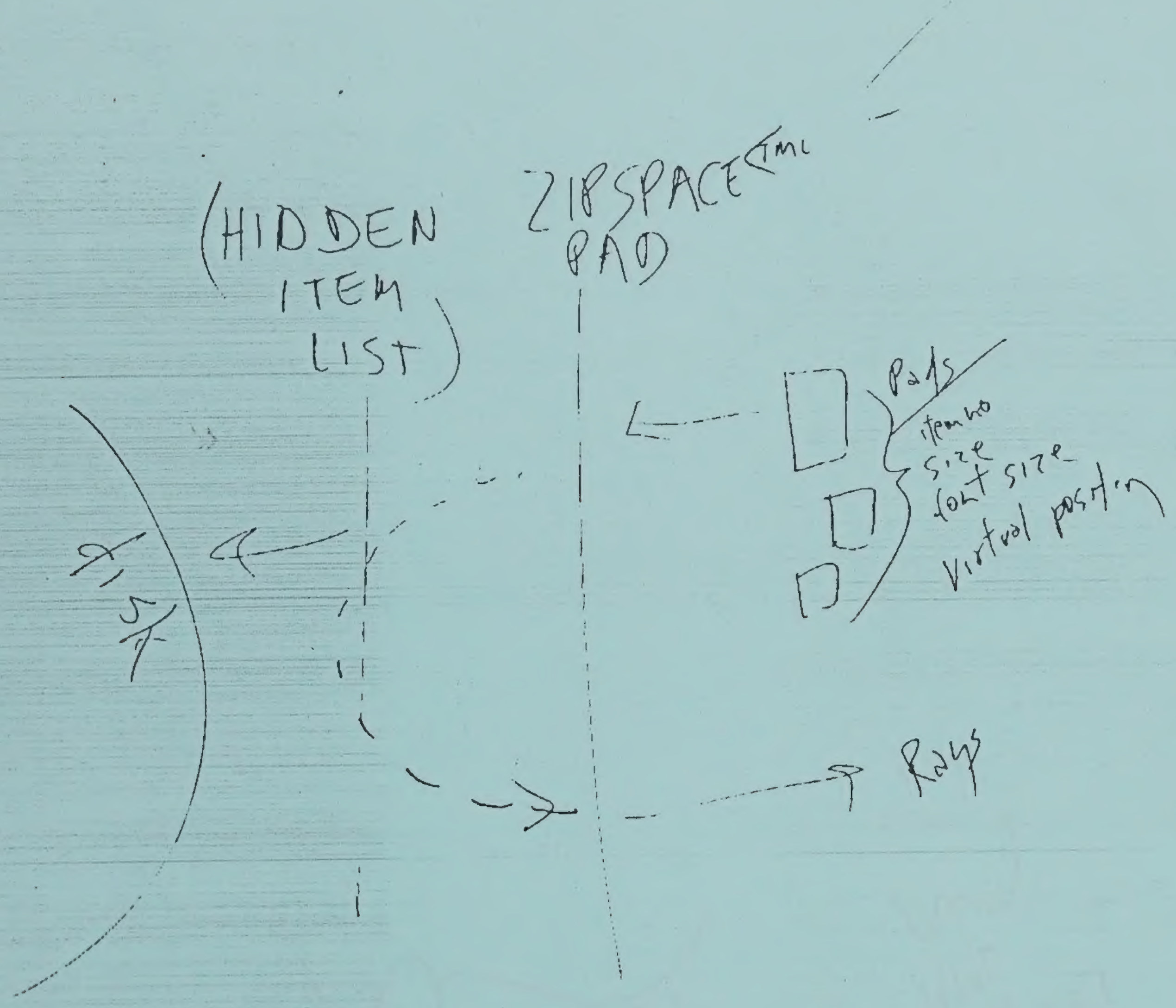

ZIP BASE
(List of current items)
maintained
Disk
request for text
PAJ
item representations? dots? rectangles?
Summarized in graphical
PICTURE OF INACTIVE PORTION

MTG MAR 1 1 1995

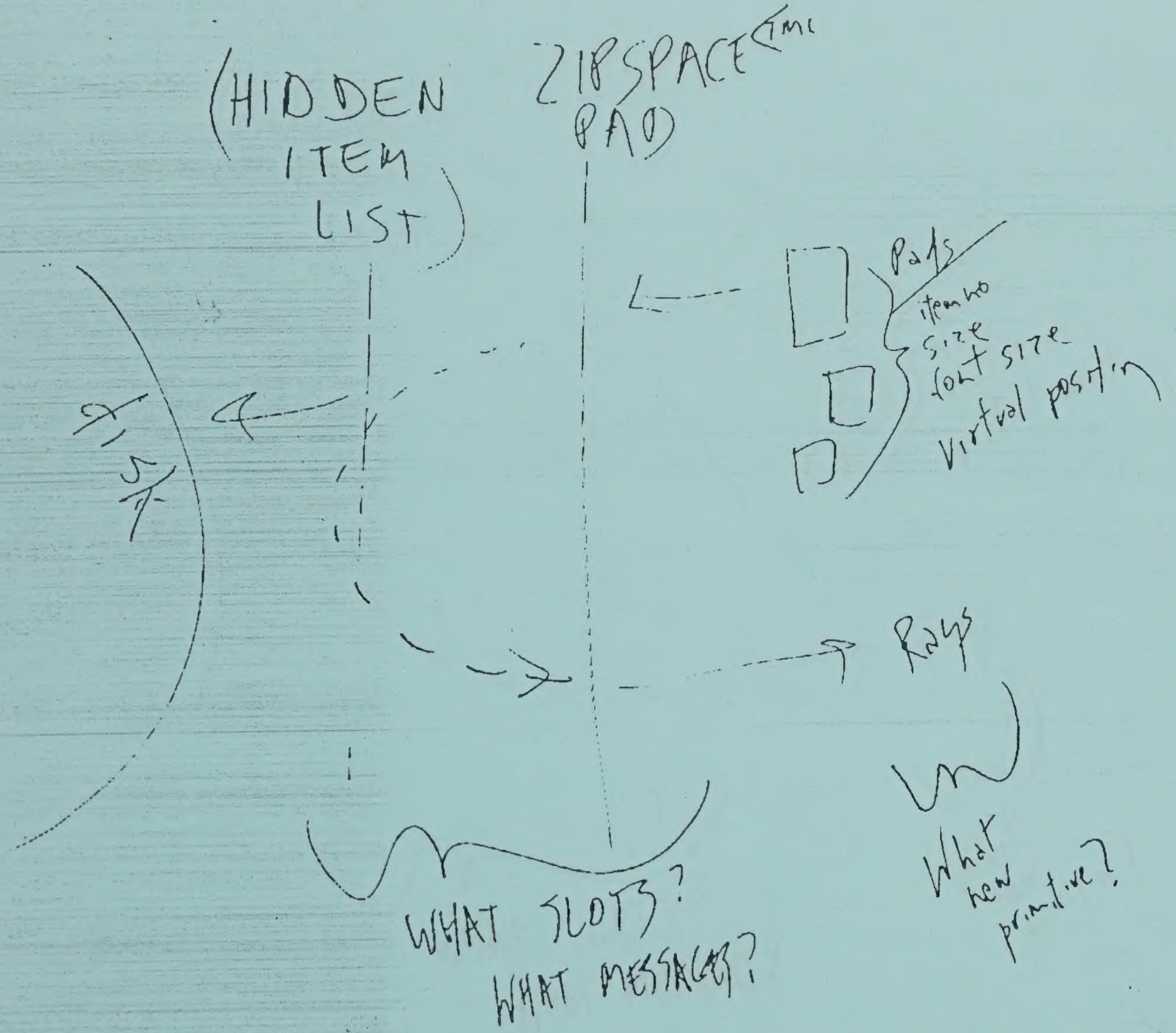
28


(HIDDEN
ITEM
LIST)
ZIPSPACE™
PAD
DISK

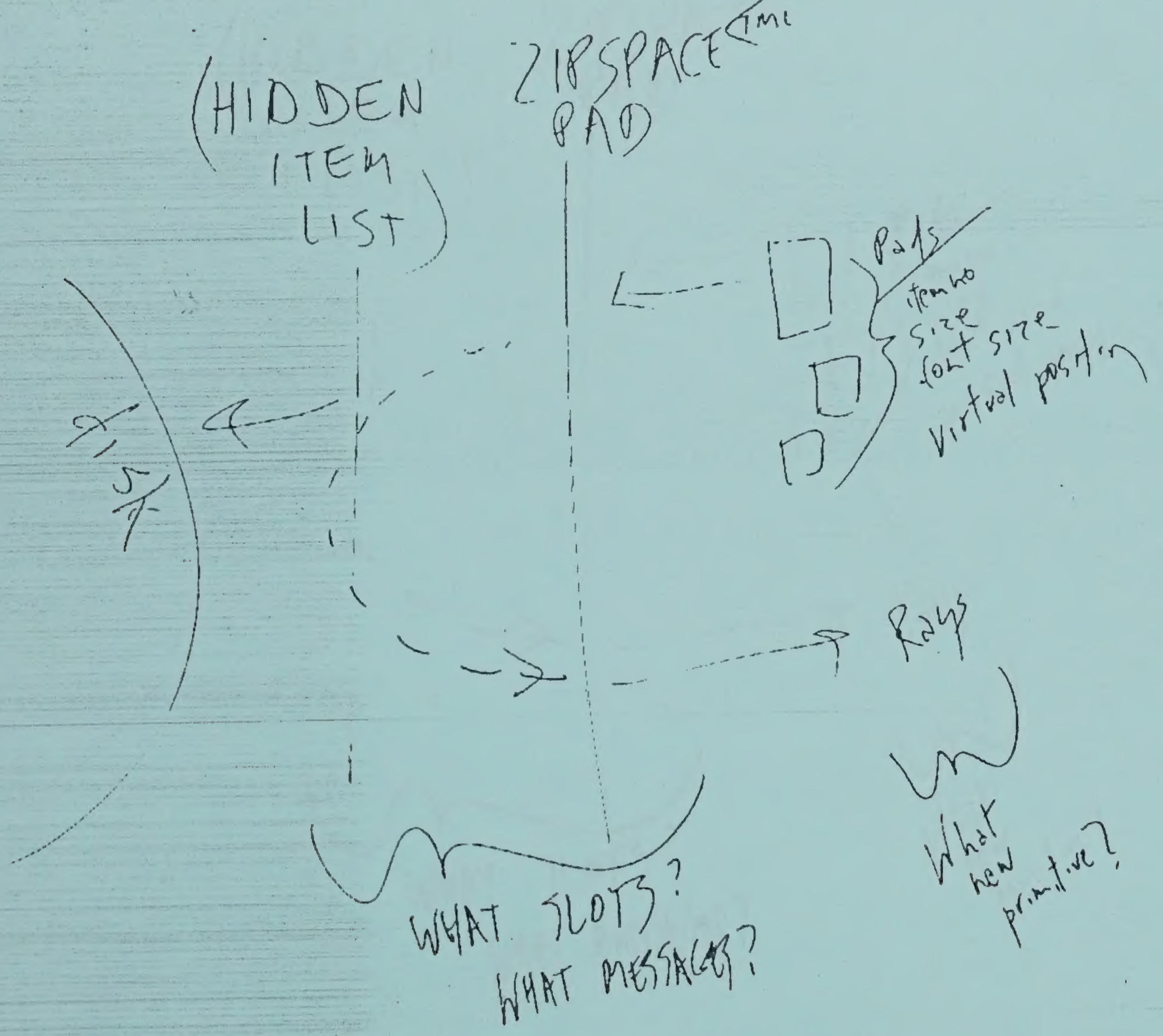
MTG MAR 1 1 1995 29


(HIDDEN
ITEM
LIST)
ZIPSPACE™
PAD
Pads
item no
size
font size
virtual position
Rays
disk

MTG MAR 1 1 1995 30


(HIDDEN
ITEM
LIST)
ZIPSPACE™
PAD
Pads
item no
size
font size
virtual position
disk
Rays
WHAT SLOTS?
WHAT MESSAGES?
What new primitive?

MTG MAR 1 1 1995 31


(HIDDEN ITEM LIST)
ZIPSPACE™
PAD
Pads
item no
size
font size
virtual position
Rays
What new primitive?
WHAT SLOTS?
WHAT MESSAGES?

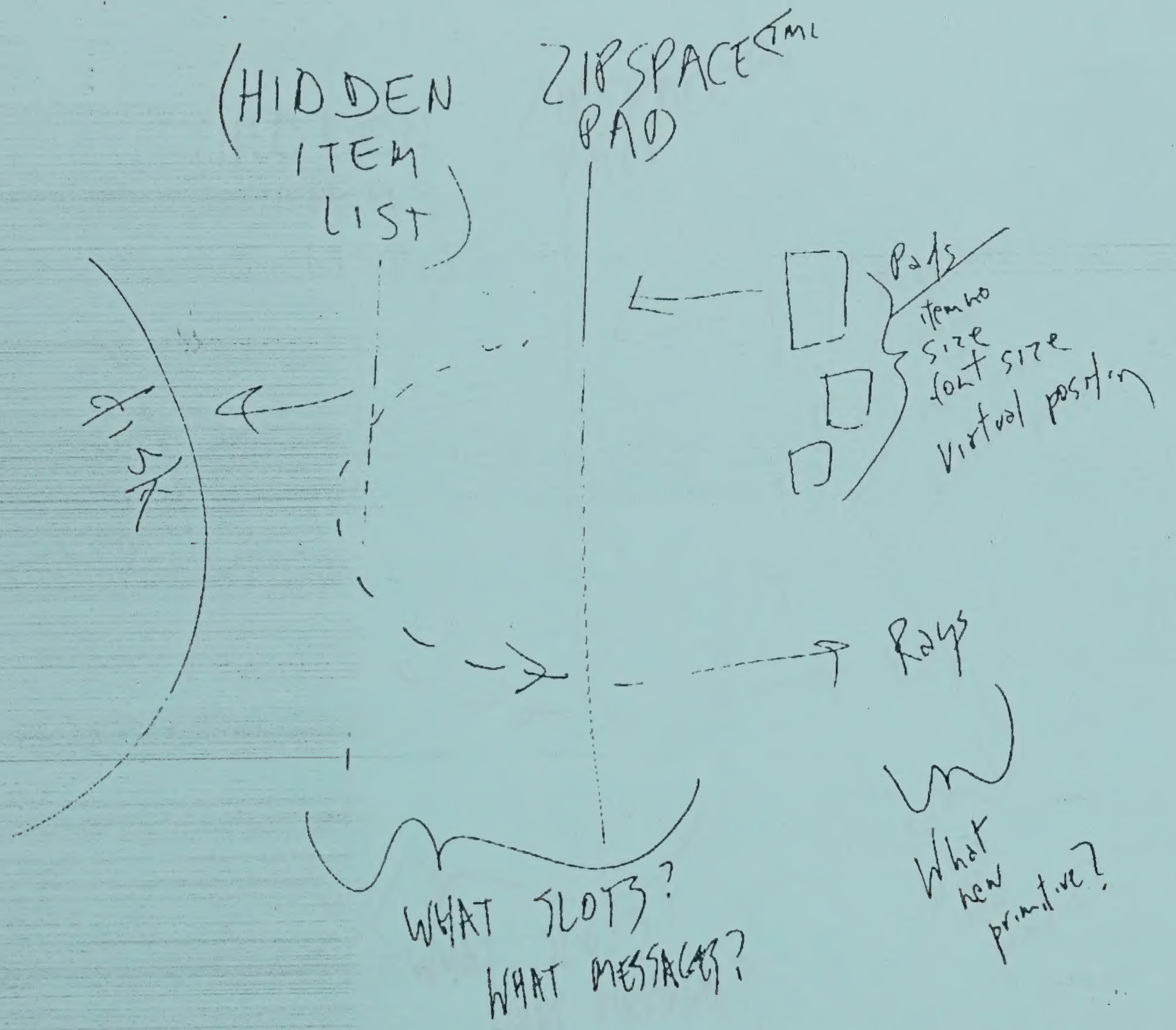
SHOWING RAYS:

Select items
select ray type
select ray propagation:
starting pads
other pads
pathways
⋮

RAY PATHS/PROJECTIONS in (x, y) plane

Is a ray a pad?

MTG MAR 1 1 1995 32


(HIDDEN ITEM LIST)
ZIPSPACE TML PAD
Pads
item no
size
font size
virtual position
Rays
What new primitive?
WHAT SLOTS?
WHAT MESSAGES?

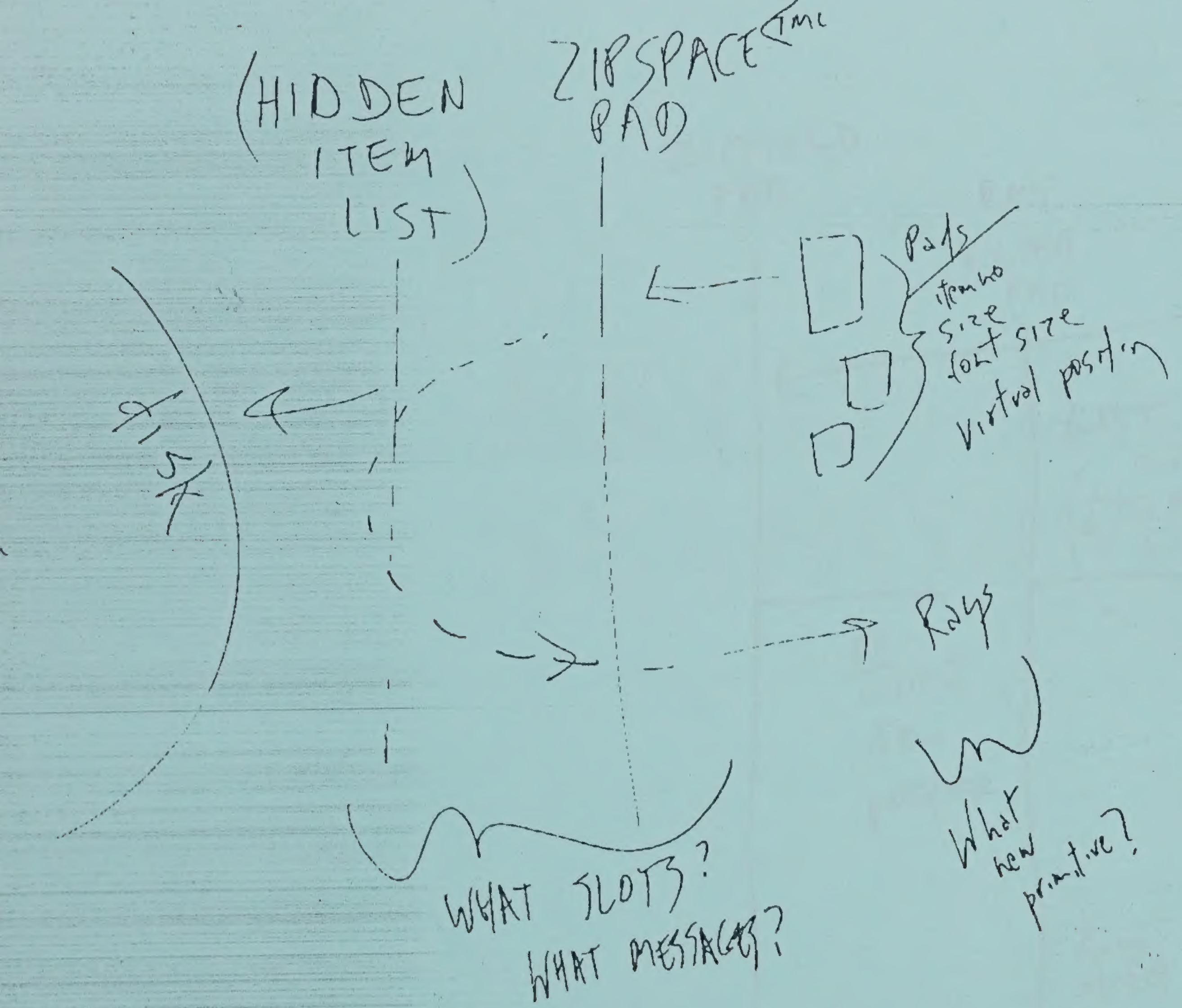
SHOWING RAYS:
- Select items
- select ray type
- select ray propagation:
  - starting pads
  - other pads
  - pathways
  - ⋮

RAY PATHS/PROJECTIONS in (x, y) plane

Is a ray a pad?

RAY IS PART OF VIEW & not directly manipulated
REQUIRES COORDINATES OF 2 PADS.

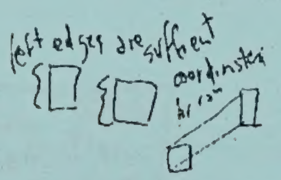
MTG MAR 1 1 1995 33


(HIDDEN ITEM LIST)
ZIPSPACE™
PAD
Pads
item no
size
font size
virtual position
disk
Rays
What new primitive?
WHAT SLOTS?
WHAT MESSAGES?

SHOWING RAYS:

- Select items
- select ray type
- select ray propagation:
  - starting pads
  - other pads
  - pathways
  - ⋮

RAY PATHS/PROJECTIONS in (x,y) plane


left edges are sufficient
coordinates

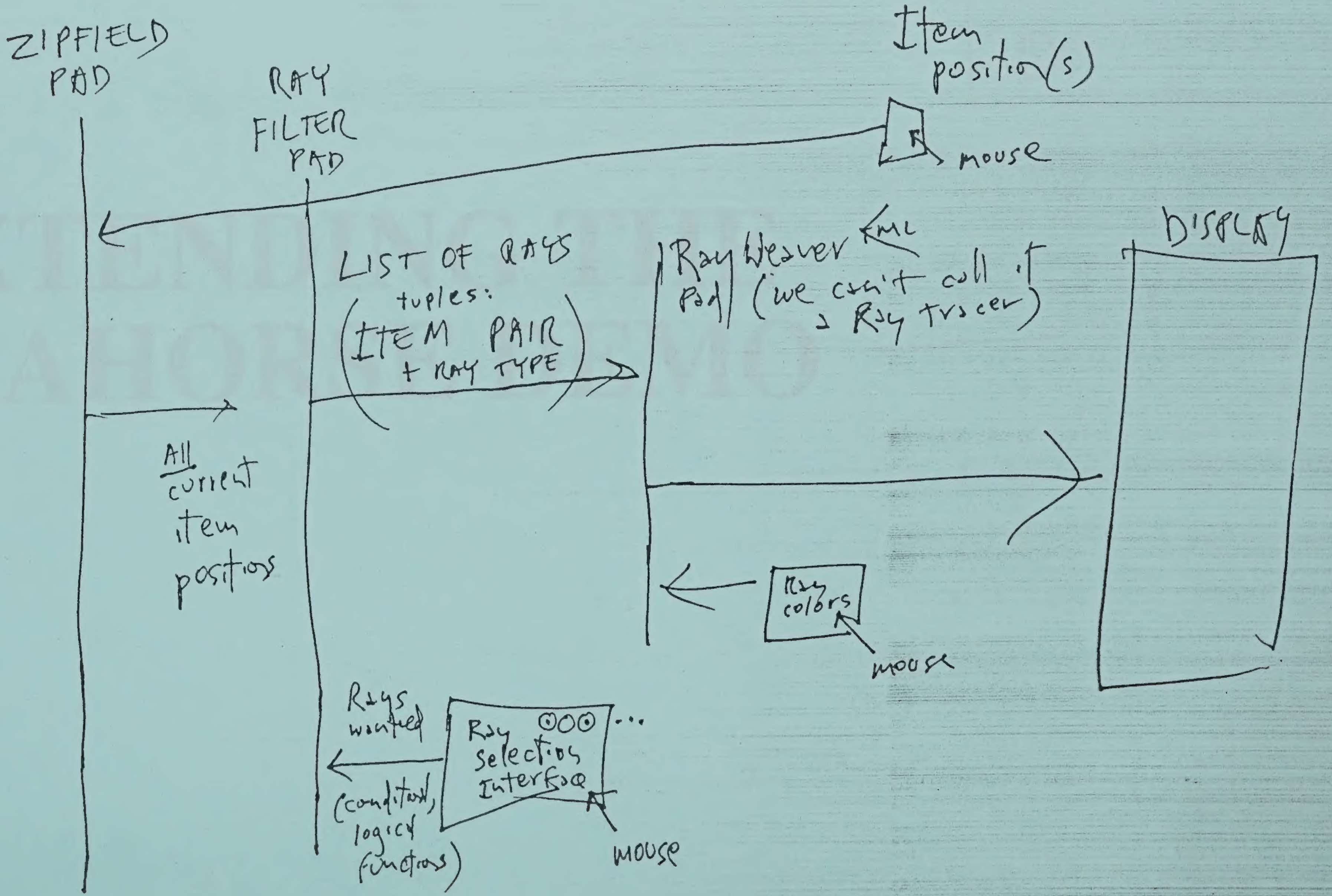
Is a ray a pad?

RAY IS PART OF VIEW & not directly manipulated
REQUIRES COORDINATES OF 2 PADS.

[Ted's later idea (4 am)]

MTG MAR 1 1 1995

34


ZIPFIELD PAD
RAY FILTER PAD
Item position(s)
mouse
All current item positions
LIST OF RAYS
tuples:
(ITEM PAIR + RAY TYPE)
Ray Weaver Pad
KML
(we can't call it a Ray tracer)
DISPLAY
Ray colors
mouse
Rays wanted
(conditional, logical functions)
Ray selection Interface
○○○ ...
mouse

MTG MARCH 11 1995

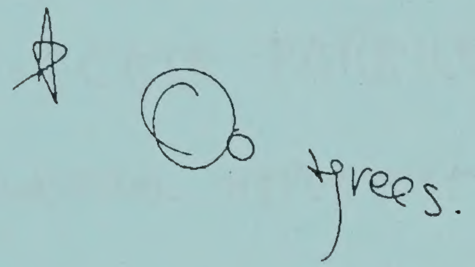
TN,

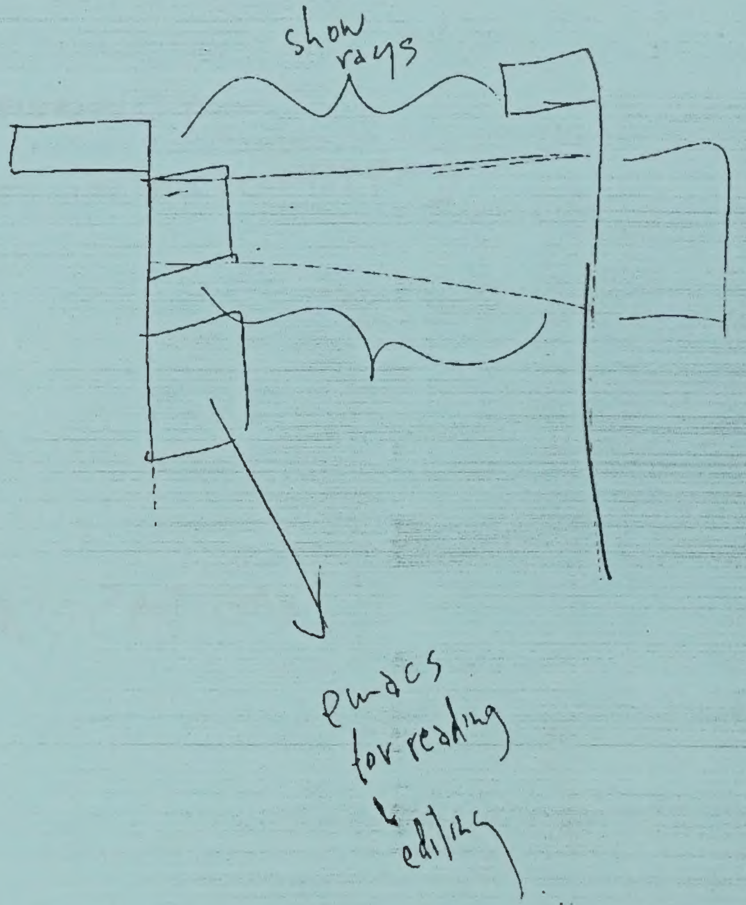
EXTENDING THE SEAHORSE DEMO

MTG MAR 1 1 1995 36

[Mr. Ookubo's put up a cute demo tying seahorse pic to emacs]

Extending Ookubo's Demo —




show rays
emacs for reading & editing

MTG—MAR 1 0 1995 Ø

1 FIRST MEETING: DEMO PLANT FOR 95.3.22

4 SECOND MEETING: ZIP EDITOR

---

5 HOW TO START THE ZIP EDITOR WITH SIMPLER FUNCTIONALITY —

7 Possible difficulties from the CLASSIC EXPECTATIONS OF INTELLIGENTPAD

12 Issues of INTELLIGENT PAD PROTOCOL

16 ZIP EDITORS — HOW IMPLEMENT?

  17 from the Bottom Up —

  18 with INVERSE HISTORY —

19 The problem of LARGE-SCALE PARALLEL VISUALIZATION.

23 EXAMPLE OF A COLLATERAL HYPERTEXT

---

26 STEPS TOWARD OUR ZIP EDITOR

---

31 Yet another definition of Transclusion.

MTG MAR 10 1995

FIRST MEETING: PLANS FOR DEMO OF 95.3.22

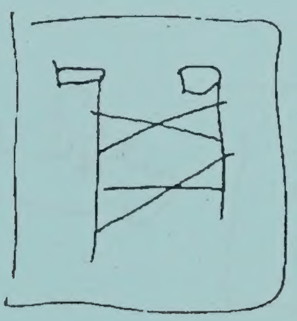
Mr. Ookubo
Mr. Takebe
Mr. Nakajima
Mr. Hidaka

MTG MAR 1 0 1995
MAR 1 0 1995

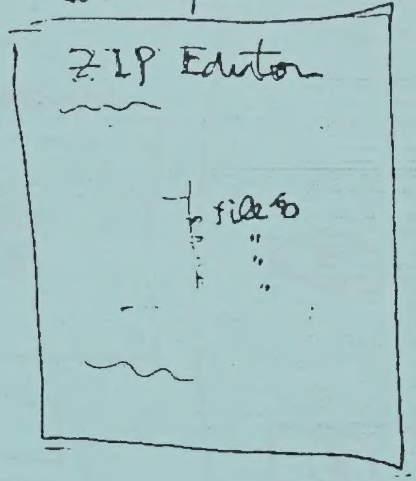
2

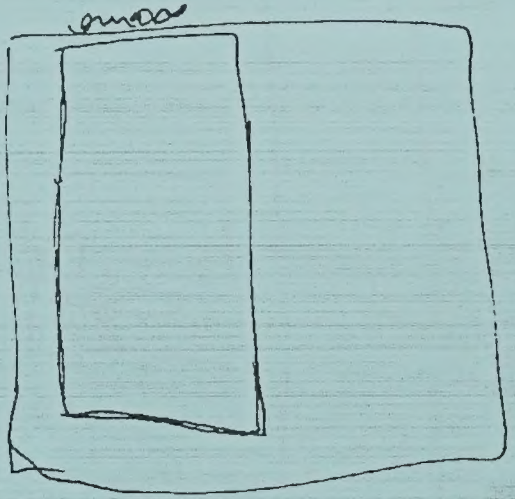
Proj 2

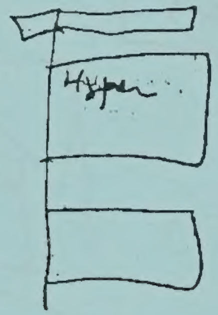
GIF



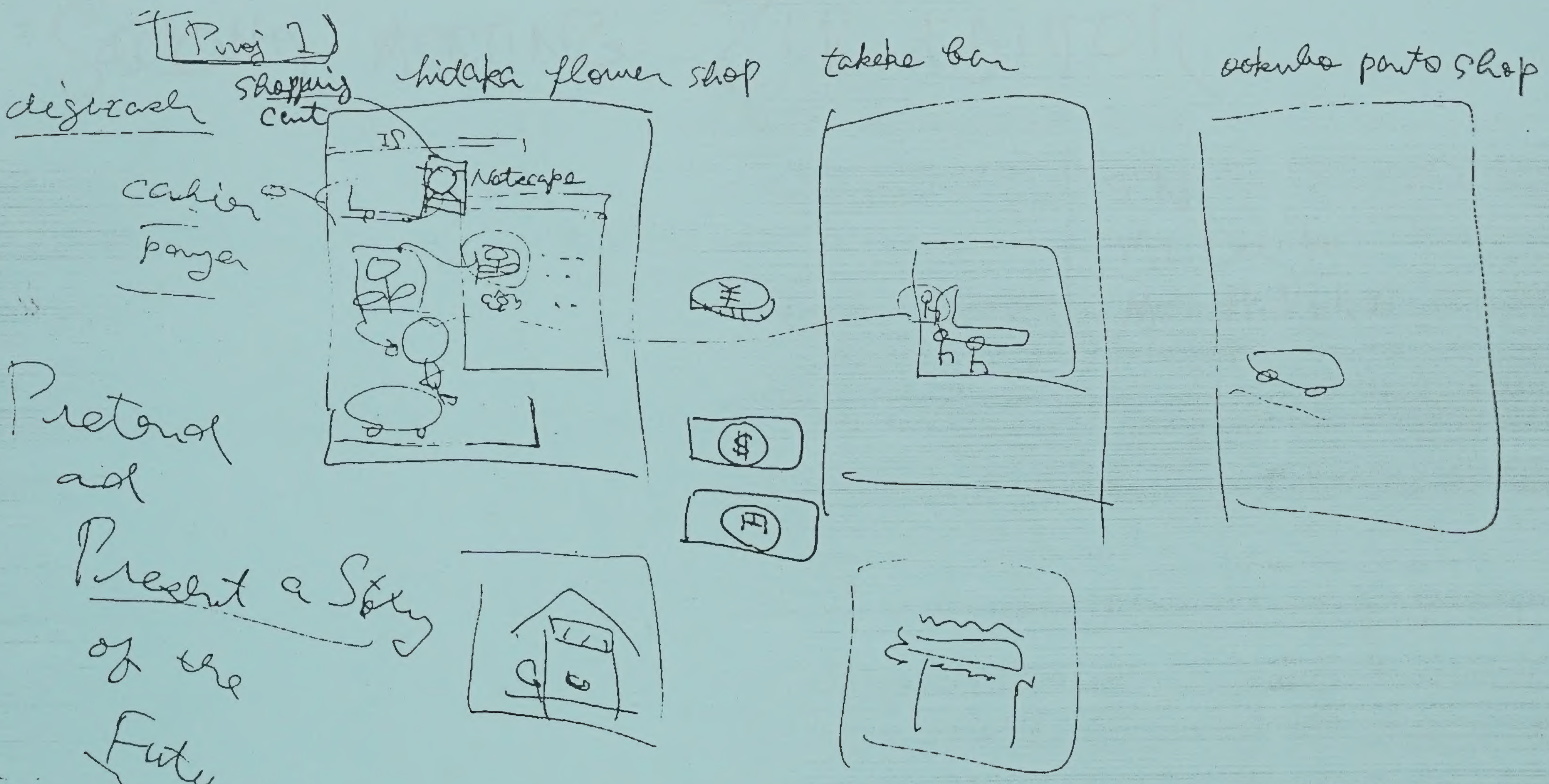
netscape


ZIP Editor
file0
"
"





MTG MAR 1 0 1995 3


Proj 1
digicash
shopping cent
cashier
payer
hidaka flower shop
takebe bar
ookubo poto shop
IS
Netscape
¥
$
円

Pretend and Present a Story of the Future

MTG MAR 10 1995 4

SECOND MEETING: ZIP EDITOR

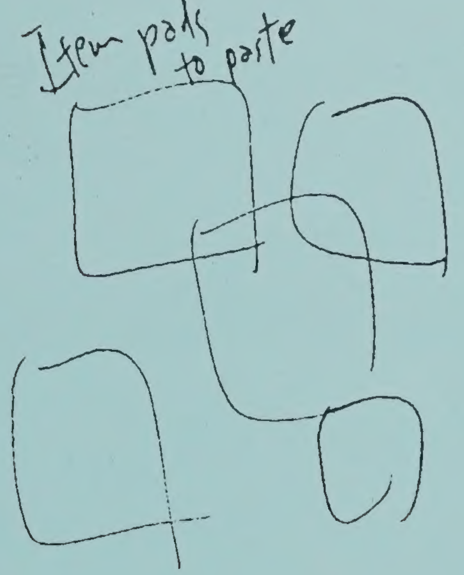
TN
Mr. Ookubo
Mr. Hidaka

MTG MAR 10 1995 5

HOW TO START THE ZIP EDITOR
WITH SIMPLER FUNCTIONALITY —

MTG MAR 1 0 1995 6

USEFUL BEGINNING FOR TIP EDITING : separate movable pads for items

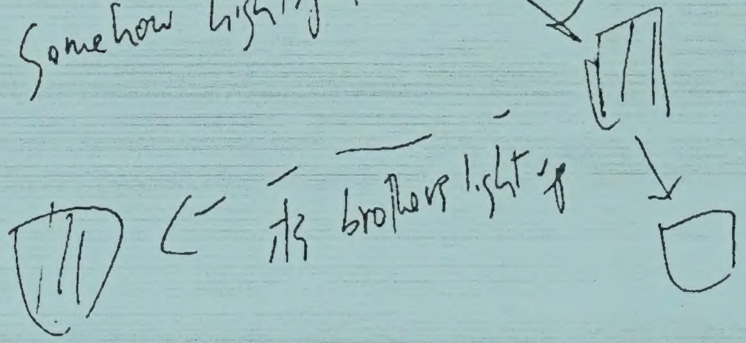


BUT show transclusions:

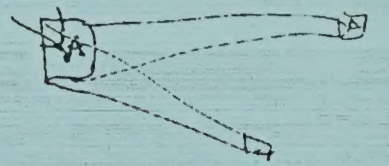
Level 1:

Somehow highlight an item

its brothers light up



Level 2: We add rays, from the left side



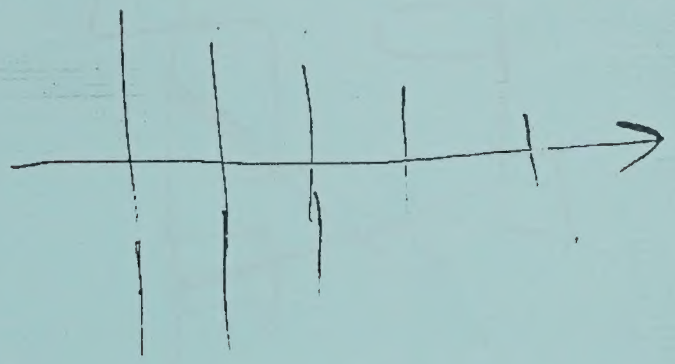
MTG MAR 1 0 1995 7

Possible difficulties from

The Classic Expectations of Intelligent Pad.

MAR 1 0 1995 8

PAD EXPECTATIONS MOUNTAIN LIKE

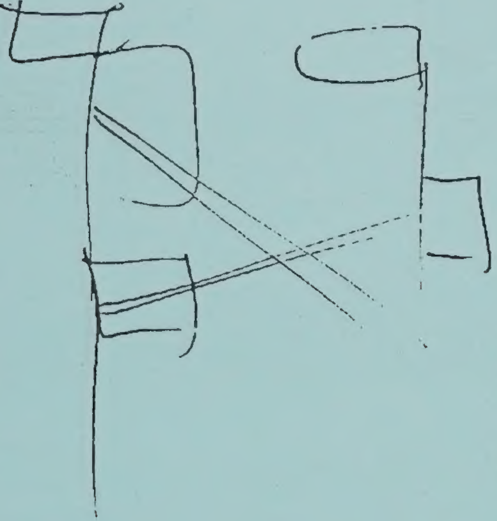


BUT

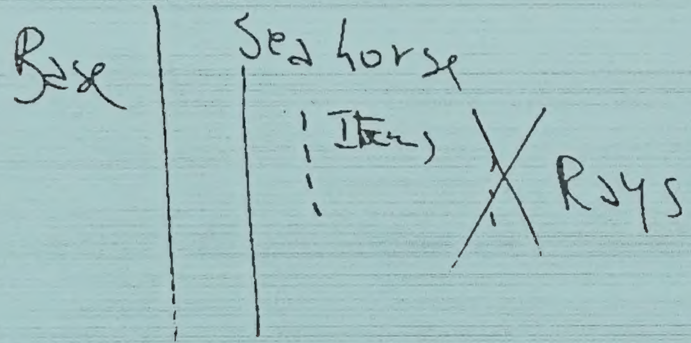
MANY THINGS
ARE POSSIBLE.

MAG MAR 1 0 1995 9

DIFFICULT?

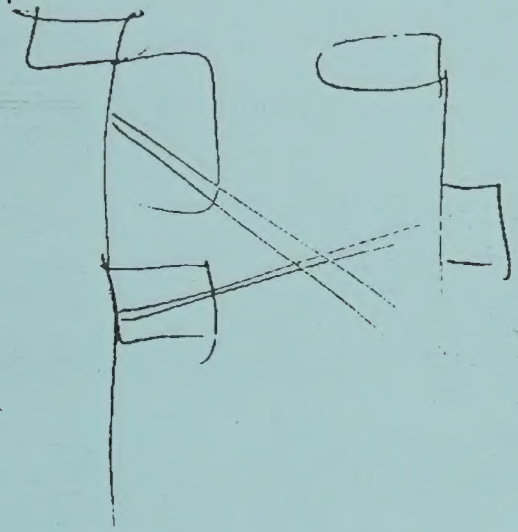


NOT MOUNTAINLIKE

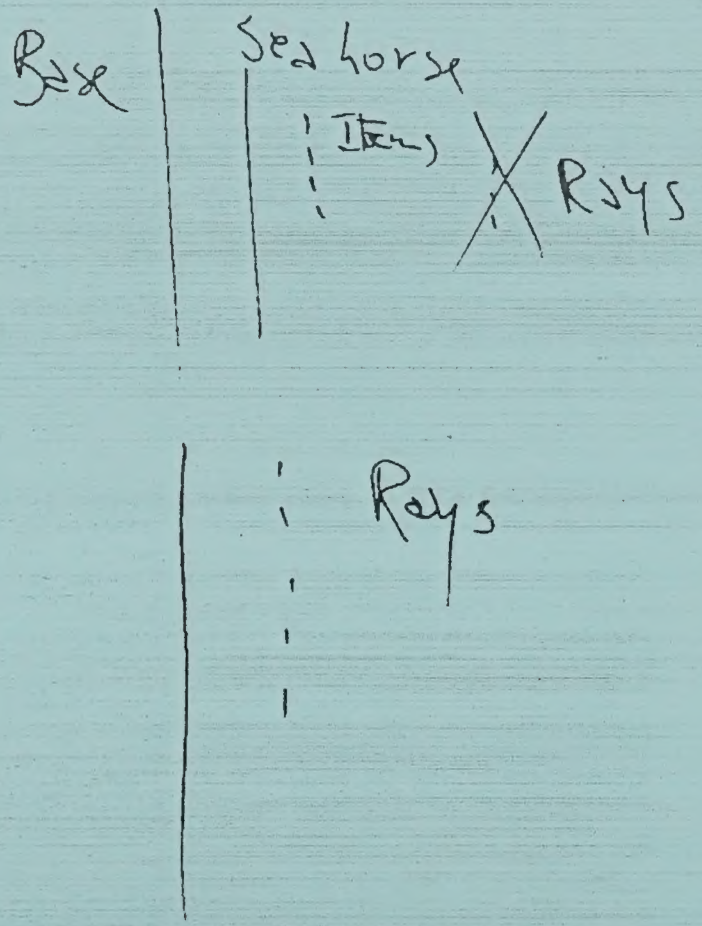

Base
Sea horse
Items
X Rays

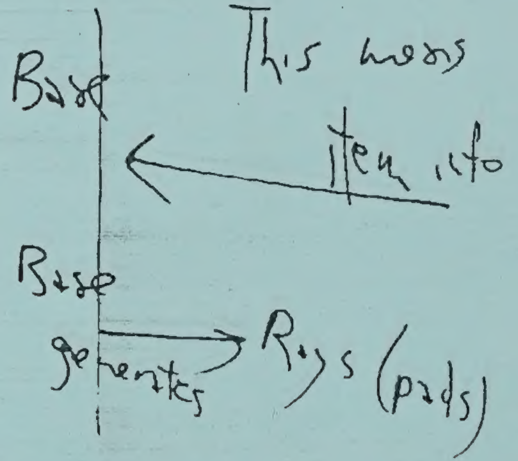
MTG MAR 10 1995 10

DIFFICULT?



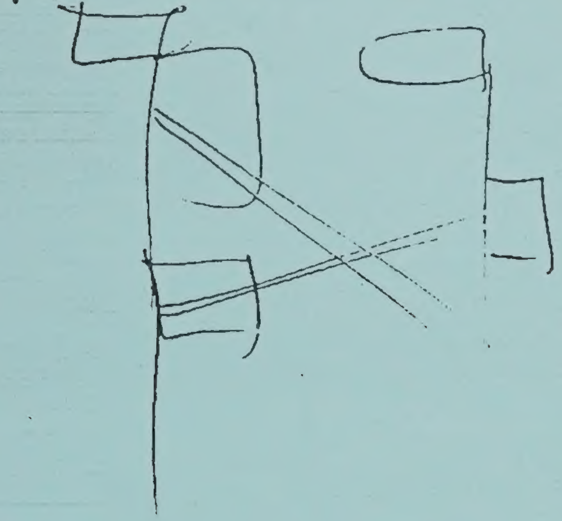
NOT MOUNTAINLIKE


Base
Seahorse
Items
Rays
Rays

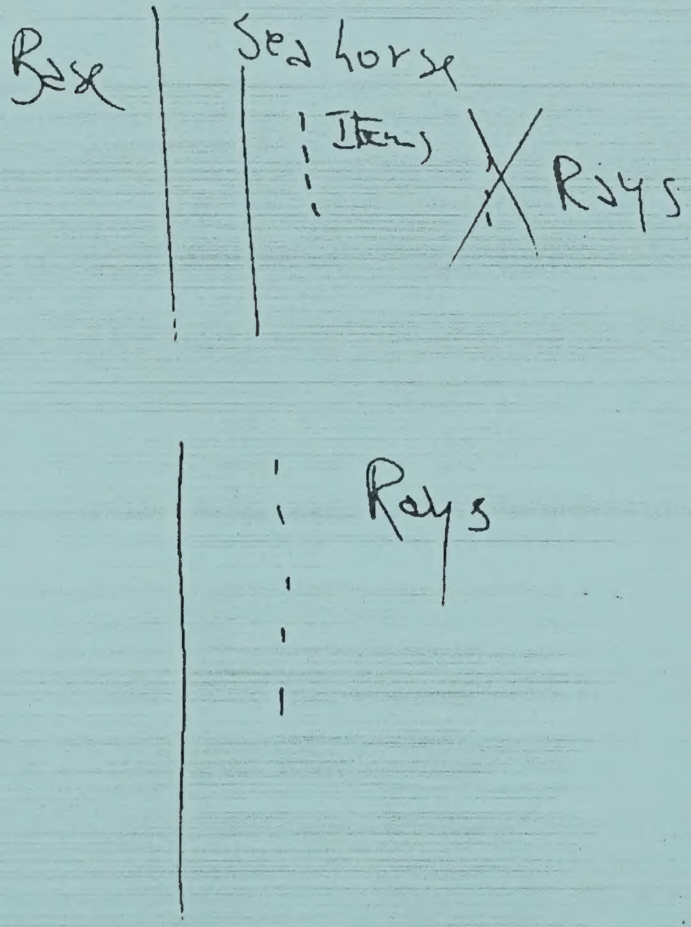

Base
This means
item info
Base
generates
Rays (pads)

MTG MAR 10 1995 JJ

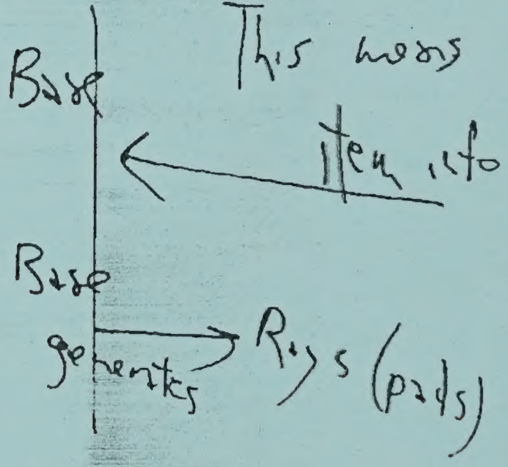
DIFFICULT?



NOT MOUNTAINLIKE


Base
Sea horse
Items
Rays
Rays

Mr. Oo says this fits the classical protocol after all!


This means
Base
item info
Base
generates
Rays (pads)

MTG MAR 10 1995 JZ

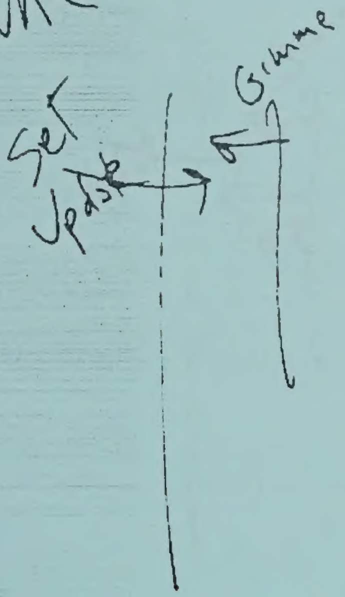
Issues of

INTELLIGENT PAD PROTOCOL —

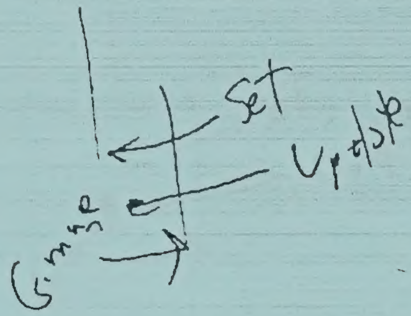
VN's INCORRECT IMPRESSION OF I. PAD]

MTG MAR 1 0 1995 13

ORIGINAL INTENT


Set
Update
Gimme

BUT This is also possible —


Set
Update
Gimme

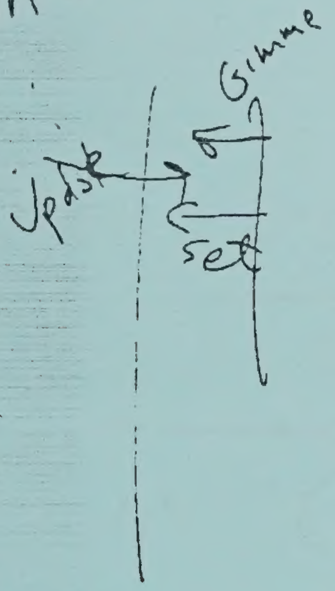
MAR 1 0 1995

MTG MAR 1 0 1995 14

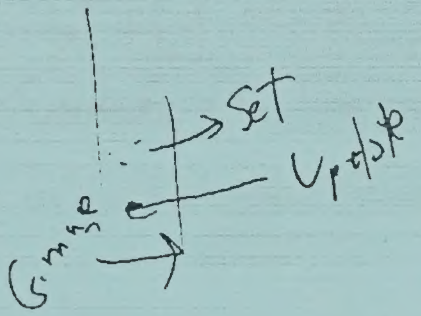
Mr. Oo's correction of 'set' —

ORIGINAL

INTENT


Update
Gimme
set

~~But this is also possible —~~


set
Update
Gimme

Mr. Oo explains

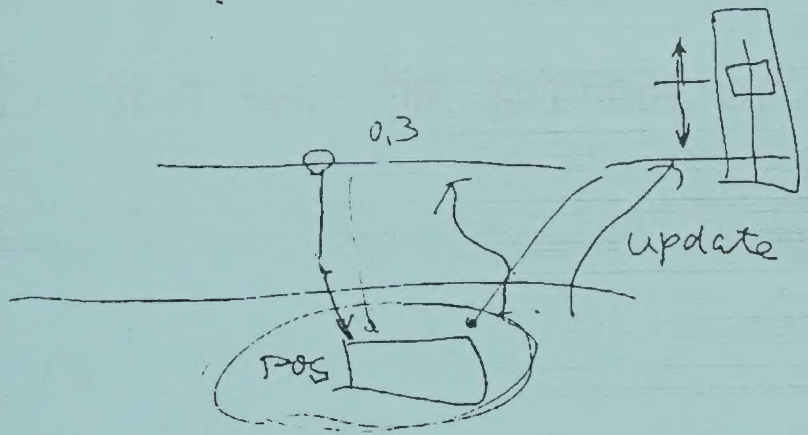
MTG MAR 1 0 1995 15

HOW I.P. PROTOCOL WORKS.

Classic example: SCROLL BAR ON A GUEST PAD.
Sends to HOST (SET)

Host BROADCASTS UPDATE
TO ALL GUESTS ON THAT SLOT

Guests do an occasional Gimme
whenever they want.



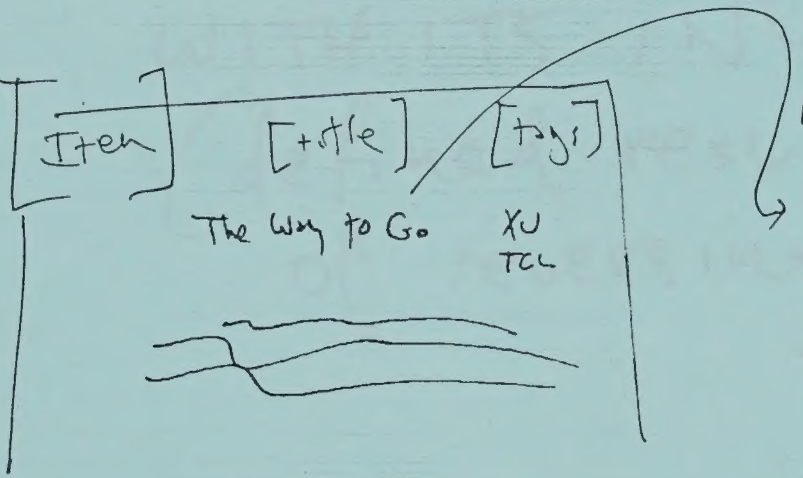
MTG MAR 1 0 1995 16

ZIP EDITORS —

Mr. Hidaka asks: How do we implement?

4. Start from THE BOTTOM UP —

MG MAR 1 0 1995 17



put title into filename?

7625. The_Way_to_Go.(parents?)

Unix keeps track of last time modified

BOTTOM LEVEL. ITEM = FILE. Unique name, time & date, parent(s), fields: title, body (input fields: zipname) R GANQ TW
← CONVERTED
ZIP = LIST OF ITEMS IN SEQUENCE
ZIPPLEX = LIST OF ZIPS
HISTORY : LIST OF OPERATIONS ⟶

(Mr. Qo suggests: 'TALE' = 'TALC')
many tails

MTG MAR 10 1995

To keep History working,
EACH NEW OPERATION
SHOULD BE DEFINED
WITH ITS INVERSE
(defined results
of reversing it)

MVG MAR 1 0 1995

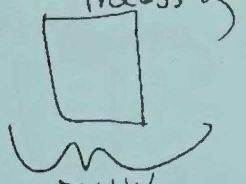
The Overall Problem: LARGE-SCALE PARALLEL VISUALIZATION.

MTG MAR 10 1995 20

OVERALL PROBLEM:

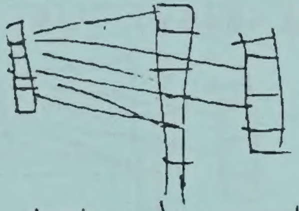
LARGE-SCALE PARALLEL VISUALIZATION OF RELATIONSHIPS

Word Processing



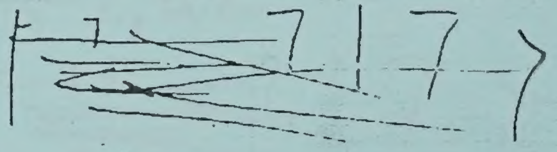
TINY ENVIRONMENT

1965 Zipeditor design

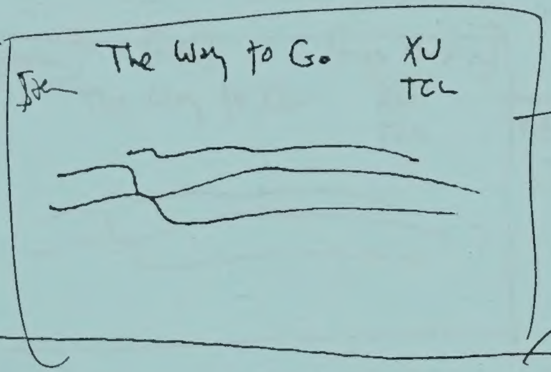


MEDIUM-SIZE ENVT: hundreds of items

1995 Zip Edition



TENS OF THOUSANDS OF ITEMS



title? → 7625. The_Way_to_Go. (parents?)

Unix keeps track of last time modified

BOTTOM LEVEL. ITEM = FILE. Unique name, time & date, parent(s), fields: title, body (input fields: zip name) ← CONVERTED

ZIP = LIST OF ITEMS IN SEQUENCE

ZIPPLEX = LIST OF ZIPS

HISTORY : LIST OF OPERATIONS →

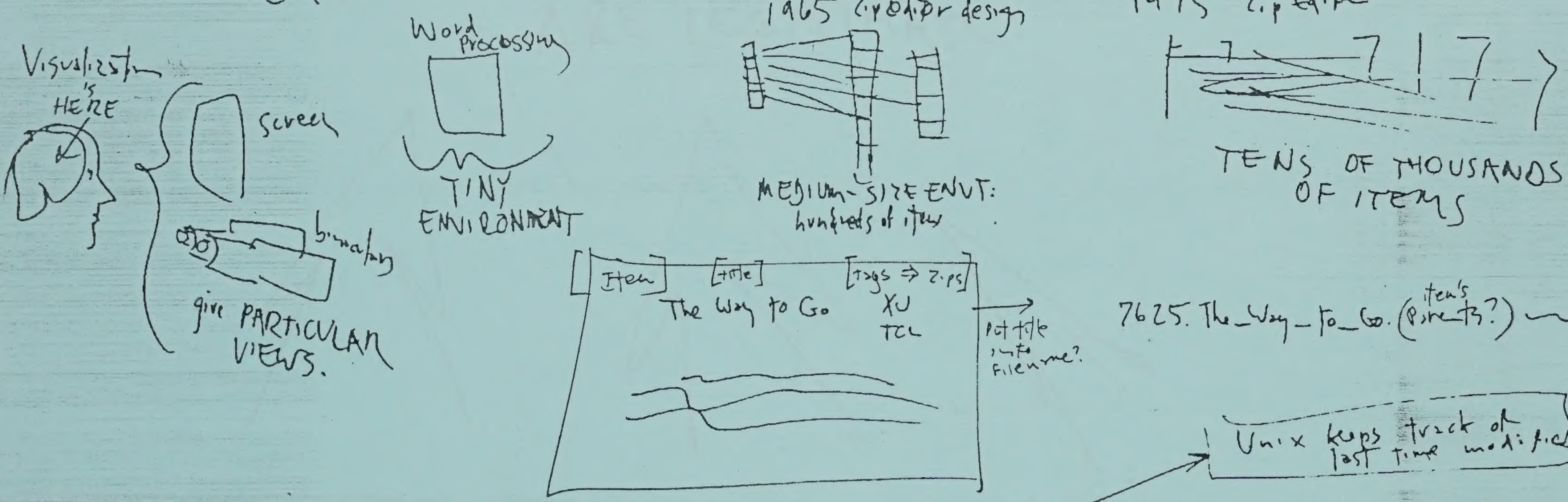
(Mr. Oo suggests: 'TALE' = 'TAIL' many tails)

R
GANCQ
TW

MTG MAR 1 0 1995 21

OVERALL PROBLEM:

LARGE-SCALE PARALLEL VISUALIZATION OF RELATIONSHIPS


Visualization is HERE
screen
binoculars
give PARTICULAR VIEWS.
Word Processing
TINY ENVIRONMENT
1965 Zip editor design
MEDIUM-SIZE ENVT: hundreds of items
1995 Zip Editor
TENS OF THOUSANDS OF ITEMS
Item
title
tags ⇒ zips
The Way to Go
XU
TCL
put title into filename?

7625. The_Way_to_Go. (item's parents?)

Unix keeps track of last time modified

BOTTOM LEVEL.

ITEM = FILE. Unique name, time & date, parent(s), fields: title, body (input fields: zipnames) ← CONVERTED ← tags R GANQ TW convert to zips

ZIP = LIST OF ITEMS IN SEQUENCE

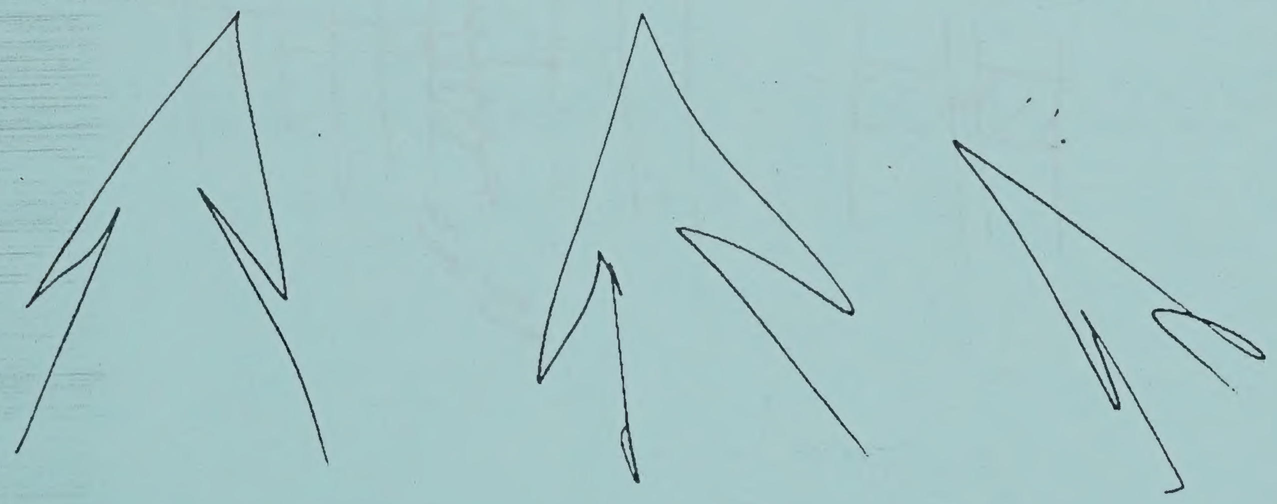
ZIPPLEX = LIST OF ZIPS

HISTORY : LIST OF OPERATIONS

(Mr. Oo suggests: 'TALE' = 'TAIL' many zips)

MAR 10 1995 22

ALL VISUALIZATIONS
ARE LEGITIMATE.



R
GMQ
TW

BOTTOM LEVEL. ITEM = FILE. Unique name, time & date, parent(s), fields: title, body (input fields: zip names) ← CONVERTED

ZIP = LIST OF ITEMS IN SEQUENCE

ZIPPLEX = LIST OF ZIPS

HISTORY : LIST OF OPERATIONS → ⇉

(Mr. Oo suggests: 'TALE' = 'TAIL' ← many tails)

Unzipped files as directories? ——→ [illegible] ([illegible] [illegible] [illegible])

[illegible] = [illegible] on disk

Site = [illegible] [illegible] [illegible]

Follow items; [illegible] = [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

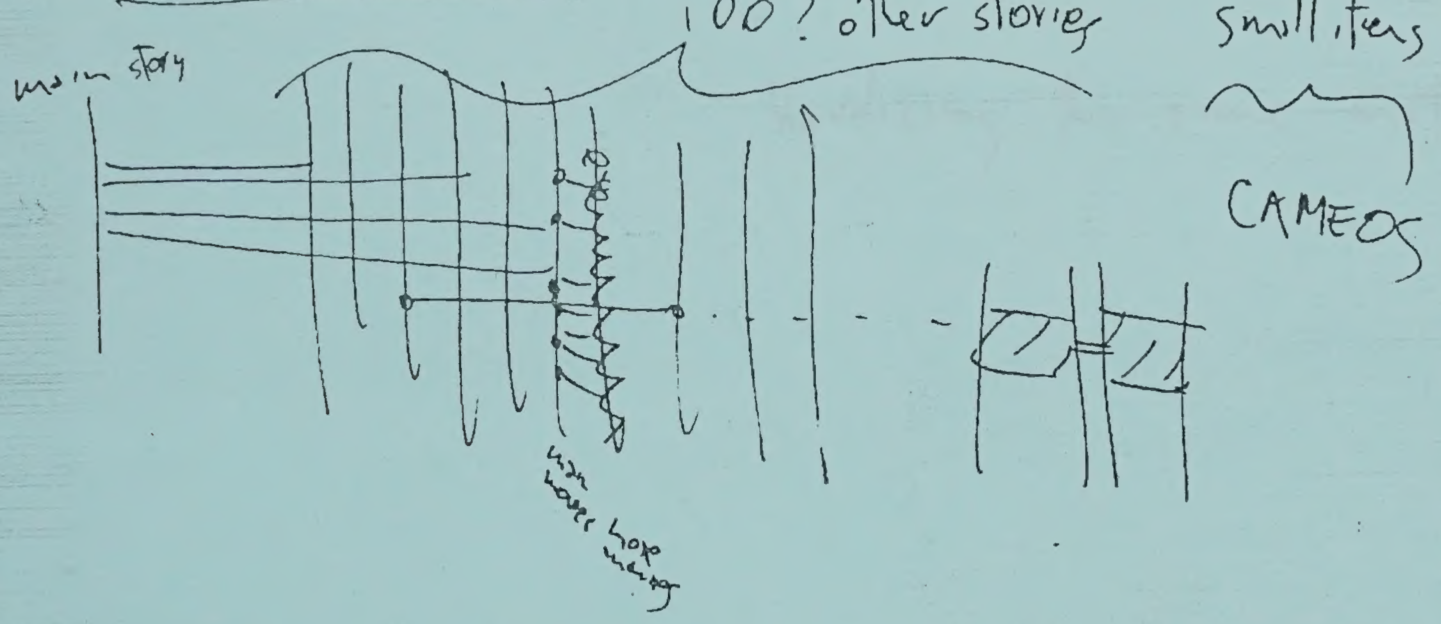
VEE [illegible]

[illegible] [illegible]

MAR 1 0 1992

MTG MAR 1 0 1995 24

TN's WORLD ENOUGH /MY COMPUTER LIFE


main story
100? other stories
small items
CAMEOS
with lower hop wiring

BOTH
AUTHOR
& READER
CAN SEE
ALL TRANSCLUSIONS

BOTTOM LEVEL. ITEM = FILE. Unique name, time & date, parent(s), fields: title, body (input fields: zip name)

← CONVERTED

ZIP = LIST OF ITEMS IN SEQUENCE
ZIPPLEX = LIST OF ZIPS
- HISTORY : LIST OF OPERATIONS →

(Mr. Oo suggests: 'TALE' ≡ 'TAIL')
← many tails

R
GANQ
TW

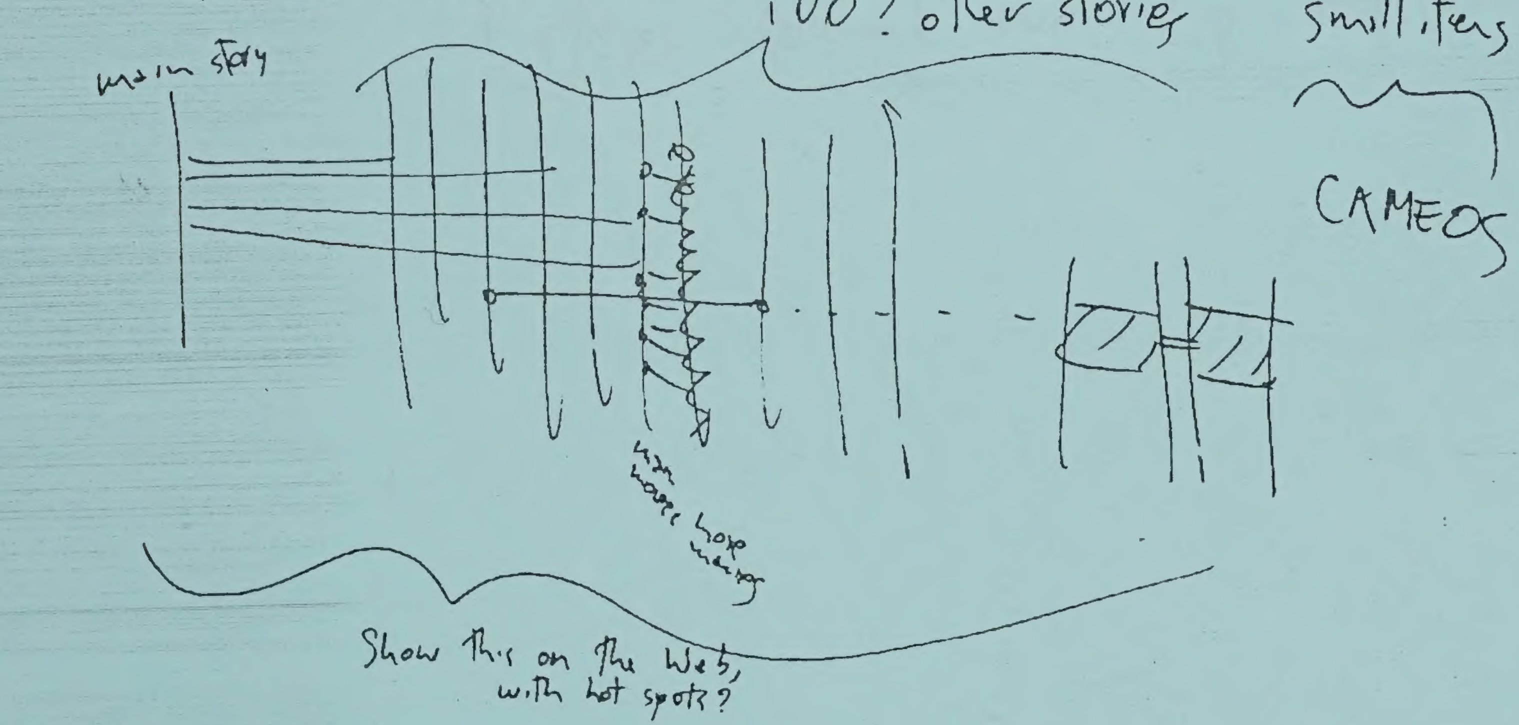
MTG MAR 1 0 1995 23

EXAMPLE OF A COLLATERAL HYPERTEXT —

Visualizing the same materials in many contexts —

MVG MAR 10 1995 25

TN'S WORLD ENOUGH /MY COMPUTER LIFE


100? other stories
small items
main story
CAMEOS
with woven loop weaving

Show this on the Web,
with hot spots?

BOTH
AUTHOR
& READER
CAN SEE
ALL TRANSCLUSIONS

R
GANQ
TW

BOTTOM LEVEL.

ITEM = FILE. Unique name, time & date, parent(s), fields: title, body (input fields: zip names)
← CONVERTED

ZIP = LIST OF ITEMS IN SEQUENCE

ZIPPLEX = LIST OF ZIPS

HISTORY: LIST OF OPERATIONS ⟶

(Mr. Oo suggests: 'TALE' ≡ 'TNC')
many tails

MG MAR 1 0 1995

SO HERE'S THE PLAN —

(steps toward our Zip Editor)

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① ITEM INPUT METHOD

② ZIP CONSTRUCTION FROM ITEMS

③ ITEM EDIT (REPLACE, SPLIT, FUSE)

④ ZIP REARRANGE, NEW ZIP

⑤ TRANSCLUDE, MULTI TRANSCLUDE, DELETE

⋮

R
GMQ
TW

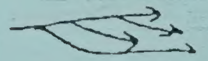
BOTTOM LEVEL. ITEM = FILE. Unique name, time & date, parent(s), fields: title, body (input fields: zipname)

CONVERTED ←

ZIP = LIST OF ITEMS IN SEQUENCE

ZIPPLEX = LIST OF ZIPS

HISTORY : LIST OF OPERATIONS ⟶



(Mr. Oo suggests: 'TALE' ≡ 'TAIL')

many tails

[illegible] OF OBSERVATIONS
WHERE X = [illegible]
S.E = [illegible]
[illegible] TONE [illegible]

② LS [illegible] WITH [illegible]

④ SIB [illegible] SIN

③ NEW EDIT ([illegible])

⑤ SIB CONSTRUCTION [illegible]

① NEW DATA METHOD

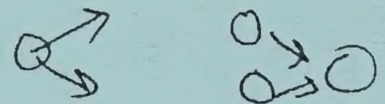
MTG MAR 1 0 1995 28

HOW TO GET STARTED

① ITEM INPUT METHOD

② ZIP CONSTRUCTION FROM ITEMS

③ ITEM EDIT (REPLACE, SPLIT, FUSE)



④ ZIP REARRANGE, NEW ZIP

⑤ TRANSCLUDE, MULTI TRANSCLUDE, DELETE

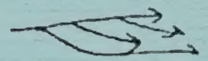
⋮

SIMPLER ZIPLESS METHOD

ITEM INPUT
duplicate (translude)
SHOW ITEMS AS PADS
SORT ON SCREEN
pile up / line up
change sizes
SHOW TRANSCLUSIONS

R
GMQ
TW

BOTTOM LEVEL. ITEM = FILE. Unique name, time & date, parent(s), fields: title, body (input fields: zip names)
← CONVERTED
ZIP = LIST OF ITEMS IN SEQUENCE
ZIPPLEX = LIST OF ZIPS
HISTORY = LIST OF OPERATIONS ⟶



(Mr. Oo suggests: 'TALE' = 'TAIC')
many tails

Perhaps a better sequence —

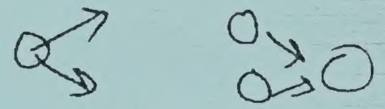
MTG MAR 10 1995 29

HOW TO GET STARTED

① ITEM INPUT METHOD

⑦ ZIP CONSTRUCTION FROM ITEMS

⑨ ITEM EDIT (REPLACE, SPLIT, FUSE)



⑧ ZIP REARRANGE, NEW ZIP

compound ops ② TRANSCLUDE, MULTI TRANSCLUDE, DELETE

COMPOUND OPS

⋮

SIMPLER ZIPLESS METHOD

① ITEM INPUT

② duplicate (transclude)

③ SHOW ITEMS AS PADS

[given] SORT ON SCREEN

[given] pile up / line up ④

change sizes ⑤

⑥ SHOW TRANSCLUSIONS

[Need some printout method]

THEN ADD ZIPS.

USEFUL EARLY STAGE.

BOTTOM LEVEL. ITEM = FILE. Unique name, time & date, parent(s), fields: title, body (input fields: zip names)

ZIP = LIST OF ITEMS IN SEQUENCE

ZIPPLEX = LIST OF ZIPS

HISTORY : LIST OF OPERATIONS

CONVERTED

(Mr. Oo suggests: 'TALE' = 'TAIL')

many tails

R
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TW

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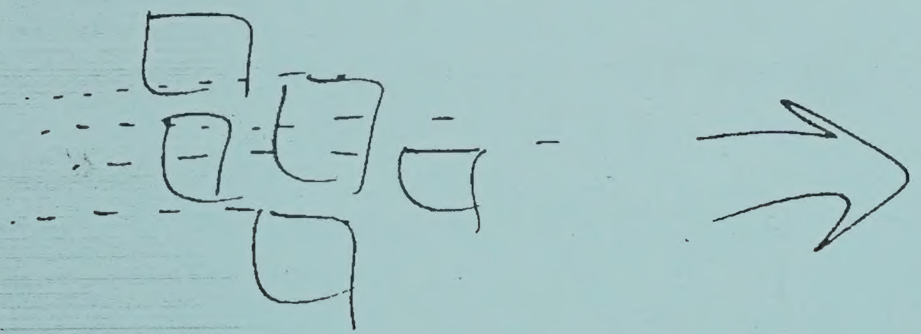
SIMPLE PRINTOUT from arrays of text pads –



Concatenate the text top to bottom
left to right
IF HEIGHT EQUAL.

MRG— MAR 1 0 1995 31

YET ANOTHER DEFINITION OF TRANSCLUSION —

MTG MAR 10 1995 32

Another ~~Recent~~ definition of transclusion:

INSTANCE EMBEDDED
IN CONTEXT,
WHICH CAN BE COMPARED
WITH OTHER CONTEXTS.